

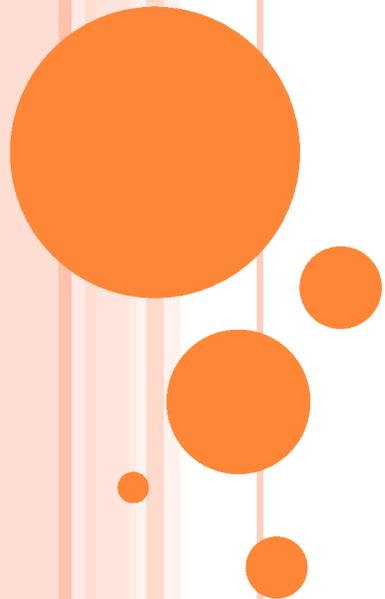
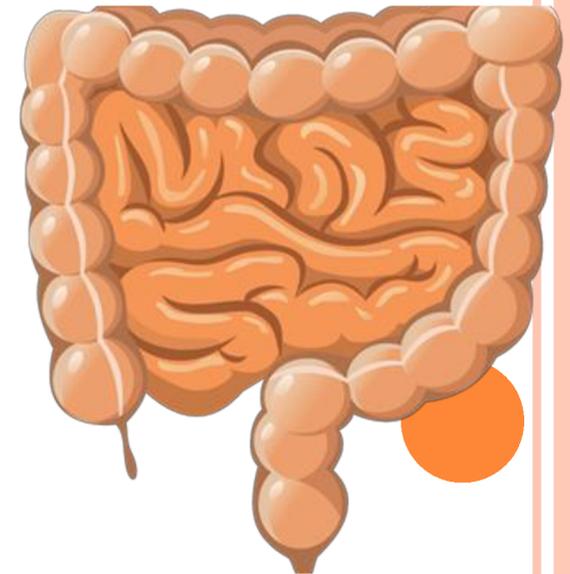
Lower gastrointestinal bleeding (LGIB)

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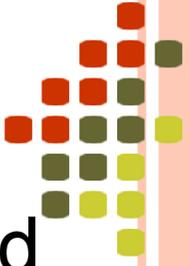
Presented by: Aya Turki Tararwneh.

Haya Jafar Saraireh.

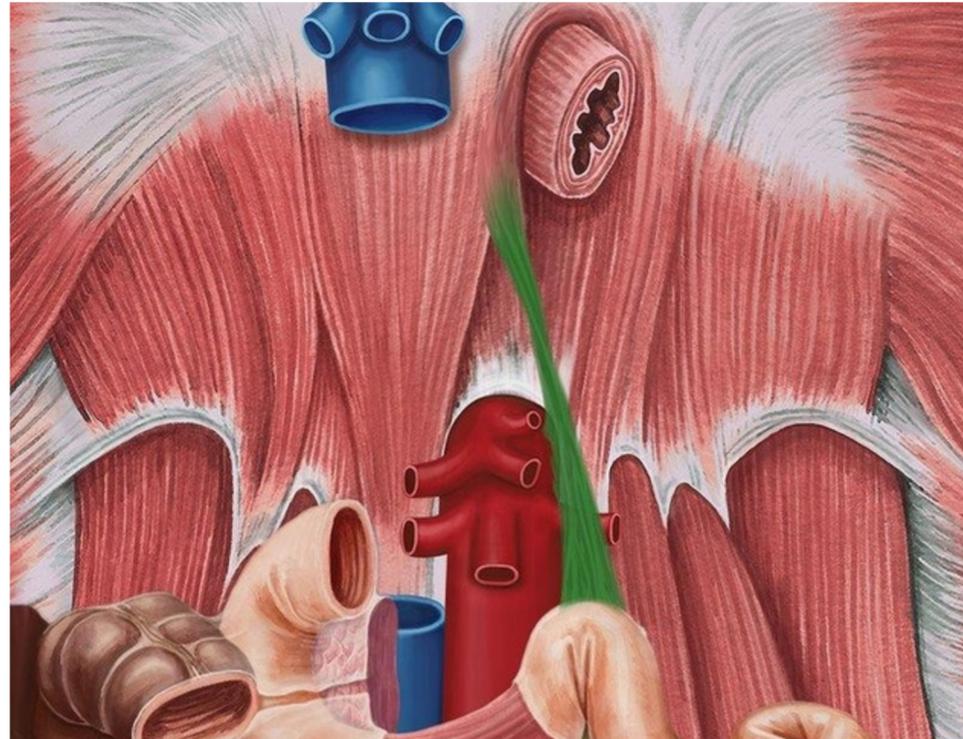
Reem Amer Gharaibeh.



Definition



lower gastrointestinal bleeding (LGIB) is defined as bleeding derived from a source **distal to the ligament of Treitz** which connects the duodenojejunal flexure to the right crus of the diaphragm.



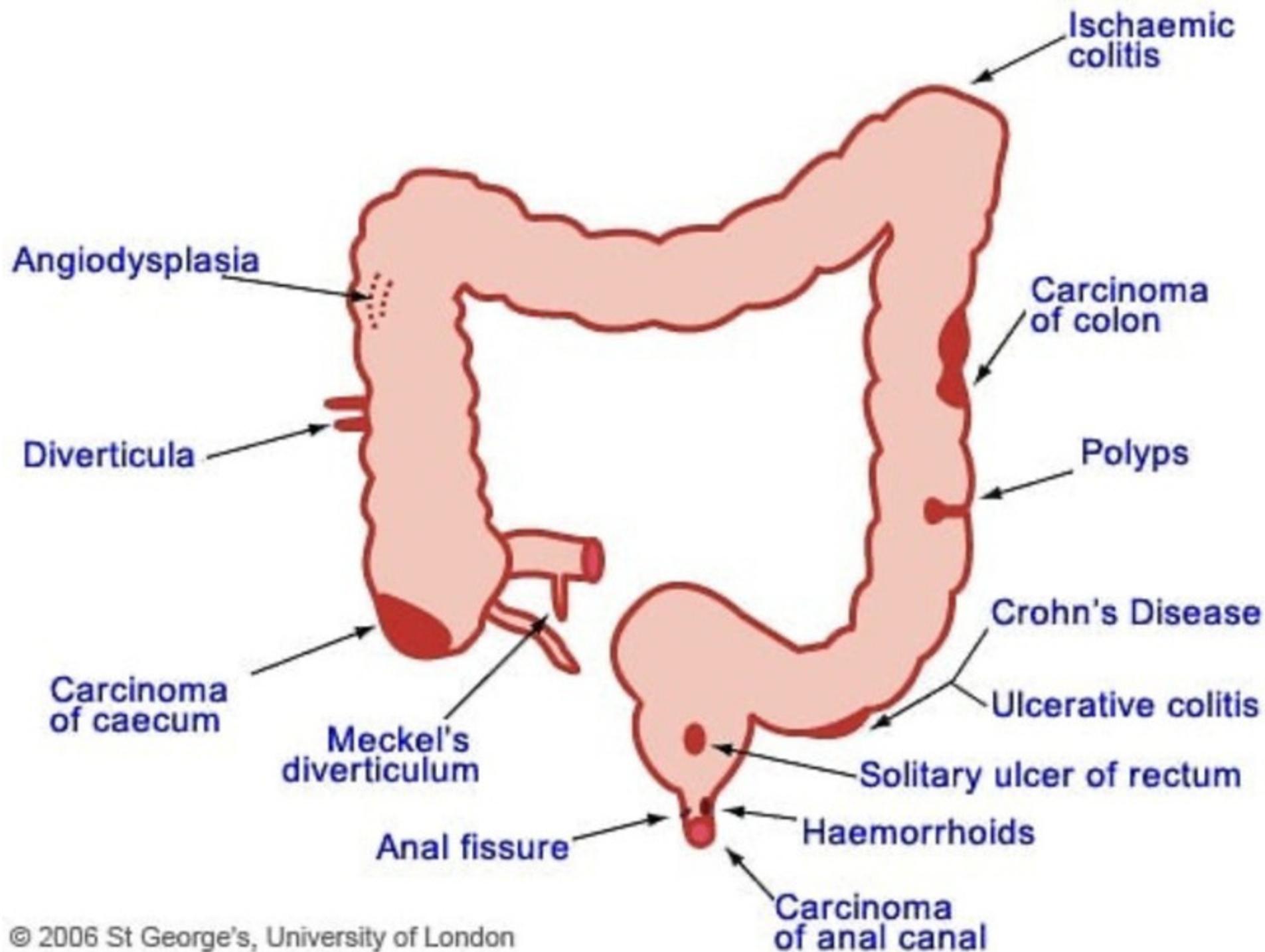
Epidemiology

- The colon is the source of hemorrhage in more than **95% to 97%** of cases, with the remaining **3% to 5%** arising in small bowel sites.
- **20-30%** of episodes of gastrointestinal hemorrhage.
- The incidence rises with advancing age (bad prognosis).
- **80%** resolve spontaneously, **25%** will re-bleed



Etiology

Erosive or inflammatory	Vascular	Tumors	Traumatic or iatrogenic	Other causes
.Diverticular bleeding (up to 65% of cases)	.Hemorrhoids .Angiodysplasia	.Colorectal cancer	.Lower abdominal trauma	. Anal Fissures
.Colitis - Inflammatory colitis caused by ulcerative colitis or Crohn disease .Infectious colitis, e.g., caused by Shigella or EHEC .Radiationcolitis	.Intestinal ischemia (ischemic colitis, late stages of acute mesenteric ischemia)	.Anal cancer	.Anorectal trauma (e.g., anorectal avulsion injury, impalement injury)	. Meckel diverticulum
.Proctitis	. Arteriovenous malformation	.Colonic polyps	.Following open or endoscopic surgery (e.g., anastomotic bleeding following a gastric bypass , hemobilia, aortoenteric fistula)	Coagulopathies
.Ulcers, e.g., rectal ulcers, stercoral ulcers	.Colorectal varices			



Risk factors

- NSAID use.
- Antithrombotic use, e.g., antiplatelet therapy, anticoagulants.
- History of prior GI bleeding.
- Older age.
- Gastrointestinal surgery



Presentation

- Hematochezia:** passage of fresh , bright, red blood in the stool .
- Rectorrhagia:** expulsion of fresh red bright blood without stool
- Melena:** black tarry offensive stools resulting from oxidation of Hb.
- Signs of volume depletion :** depending on rate and severity of blood loss (tachycardia , hypotension , altered mental status , syncope).
- Symptoms and signs of anemia :** e.g. , fatigue , pallor , exertional dyspnea .
- Features of the underlying cause of GI bleed:** o Abdominal pain, nausea and/or vomiting.
Unintentional weight loss. Constipation and/or painful defecation.



Categories by Severity and Presentation

1. Massive bleeding:

- Patients >65 years of age with multiple medical problems.
- Presents as a large volume of bright red blood PR
- Bleeding > 1.5 l / day
- Hemodynamically unstable
 - SBP < 90 mmHg
 - Hr > 100/min
 - Low urine output
- Hemoglobin level ≤ 6 g/dl
- Mortality rate may be as high as 21%



2. Moderate bleeding:

- Patients with any age ,may present as hematochezia or melena .
- Hemodynamically stable patients.
- Long list of diseases including: Anorectal, Congenital, Inflammatory, and Neoplastic.

3. Occult Bleeding:

- Patients with any age, patients present with microcytic hypochromic anemia due to chronic blood loss.
- Detected by routine **chemical tests of the stool**, with or without systemic evidence of chronic blood loss



Clinical evaluation

History

- Analysis of bleeding (painfull /less),mixed with stool or on toilet paper.
- History of GI bleeding.
- History of GI surgery or recent endoscopic procedure.
- Medication history, e.g., NSAIDs, antithrombotic agents, beta blockers.
- weight loss,abdominal pain ,tenesmus,constipation,family history.

Physical examination

- Vital signs to assess for massive hemorrhage
Resting SBP \leq 90 mm Hg and/or HR \geq 120/min
Orthostatic hypotension
- Abdominal examination, including DRE to assess for: Melena, hematochezia ,Hemorrhoids, anal masses
- Signs of malignancy (cachexia).

Laboratory studies

- CBC :Normal or \downarrow Hb and Hct Low MCV is suggestive of IDA (chronic blood loss).
- Platelets to assess for thrombocytopenia
- BMP: \uparrow BUN/Cr ratio suggests UGIB.
- LFTs , renal function .
- Coagulation profile : platelet count , PT , PTT , INR .
- Stool guaiac for occult blood.



Approach to suspected LGIB

1. Initial Assessment & Stabilization

Hemodynamic Assessment: Immediately assess the patient's hemodynamic status and begin resuscitation with intravenous fluids.

History & Physical: Elicit a detailed history including the nature, frequency, and duration of bleeding, as well as associated symptoms and relevant medical history (e.g., NSAID use, cardiovascular disease).

2. Diagnostic Modalities

Colonoscopy: The primary diagnostic and therapeutic tool for stable patients who can tolerate bowel preparation.

Computed Tomography Angiography (CTA): A first-line option for patients with active, ongoing bleeding who are hemodynamically unstable or cannot undergo adequate bowel preparation. CTA can effectively localize the bleeding site even with low-flow bleeding (as low as 0.1 mL/min).

Tagging Red Blood Cell Scintigraphy: Not recommended for routine use in the evaluation of lower GI bleeding.

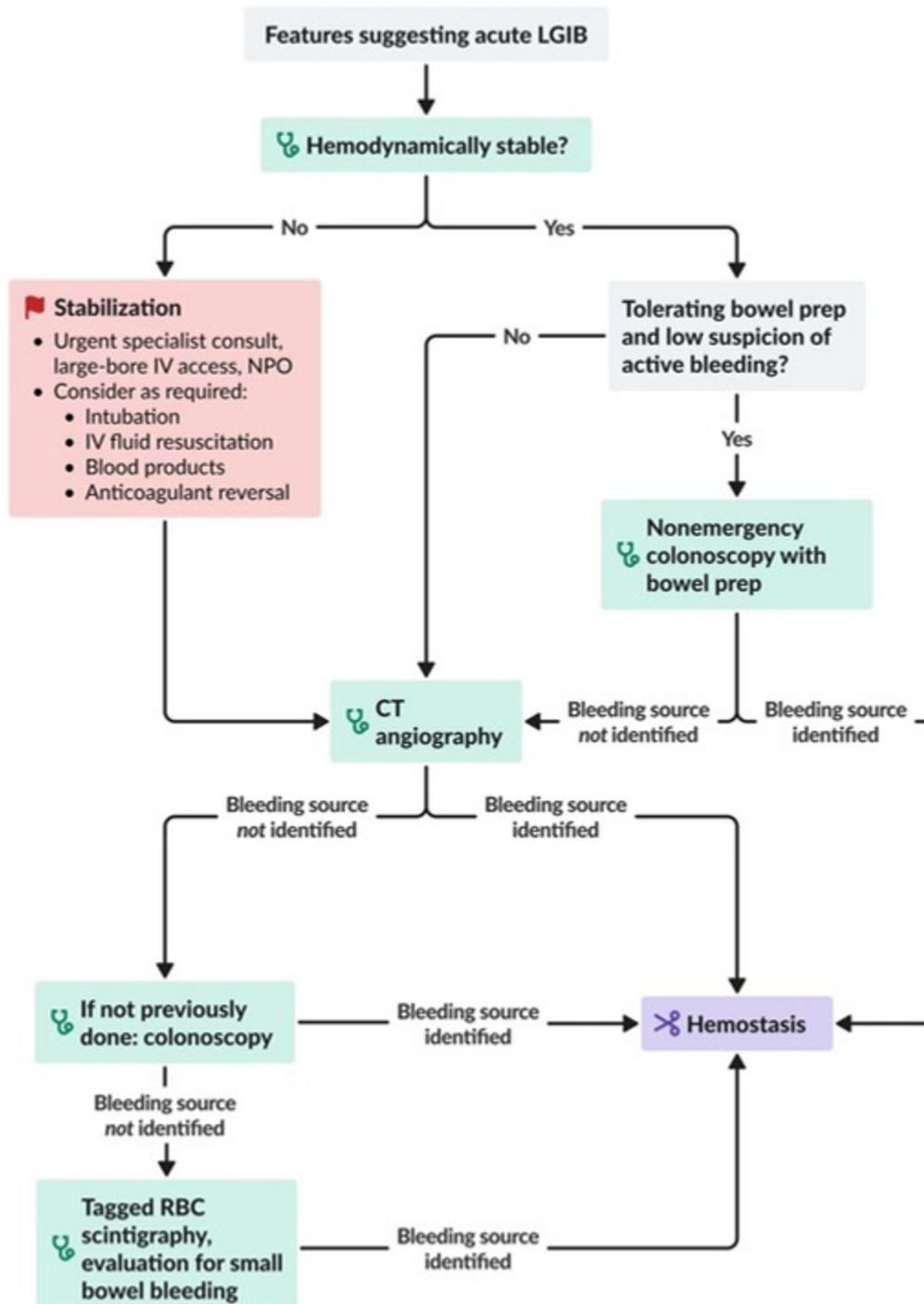
3. Therapeutic Interventions

Endoscopic Hemostasis: For diverticular bleeding, use epinephrine injection combined with thermal coagulation or clipping. For angiodysplasia, argon plasma coagulation (APC) is effective.

Interventional Radiology: Embolization can be considered, particularly for diverticular bleeding when the source is identified.

Surgical Resection: A last resort for severe or recurrent bleeding, but requires careful localization of the source before intervention

Management of acute lower gastrointestinal bleeding (LGIB)



1- Diverticular Disease



Diverticula : blind pouches that protrude from the gastrointestinal wall and communicate with the lumen. Caused by increase intraluminal pressure.

True diverticulum

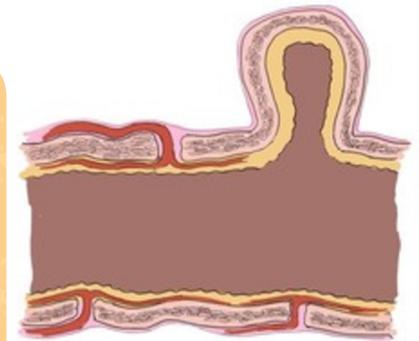
affects all layers of the intestinal wall.

- o Rare (except Meckel diverticulum).
- o Typically congenital.
- o Most commonly occur in the cecum.
- o Occur less commonly in the colon.

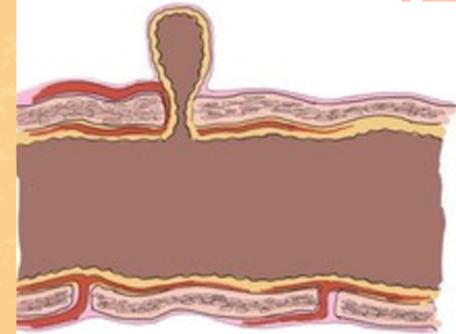
False diverticulum or pseudodiverticulum

involves only the mucosa and submucosa and does not contain muscular layer or adventitia.

- o Most common type of gastrointestinal diverticula.
- o Typically acquired.
- o Localized particularly in the sigmoid colon.

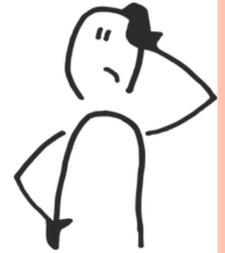


True diverticulum



Pseudodiverticulum

Diverticulosis (pouch in the colon wall) should be distinguished from diverticulitis (inflammation or infection of diverticula). - Diverticulitis is a complication of diverticulosis.

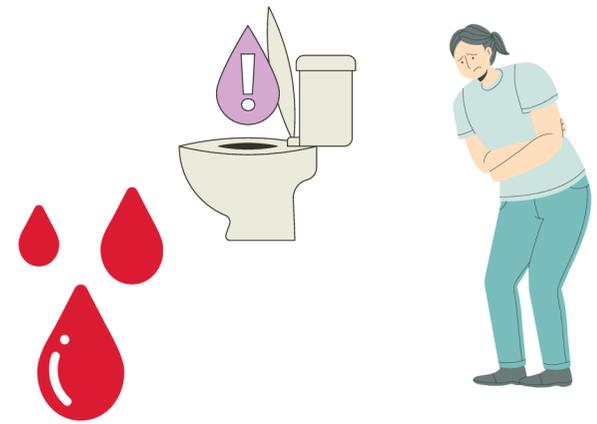


 **Caused** mainly by lifestyle and environmental factors :

-  Diet (low-fiber, rich in fat and red meat).
-  Obesity.
-  Low physical activity.
-  Increasing age.
-  Smoking.
-  Other causes: genetic factors
-  Connective tissue disorders (e.g., Marfan syndrome, Ehler-Danlos syndrome)
-  Autosomal dominant polycystic kidney disease.

• Clinical features

- Usually asymptomatic.
- May manifest with abdominal discomfort or **pain**, especially if associated with chronic **constipation**.
- **Diverticular bleeding**.



• Diagnosis

- **Colonoscopy**: diagnostic modality of choice for suspected symptomatic diverticulosis.

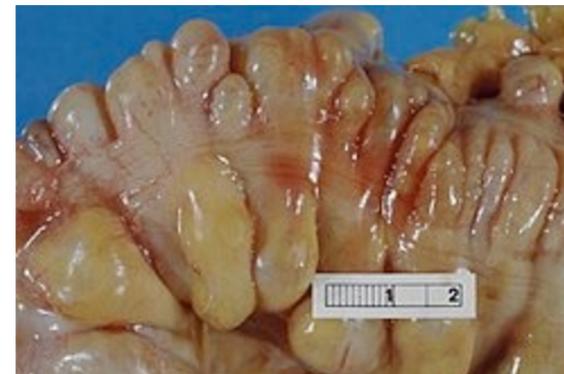
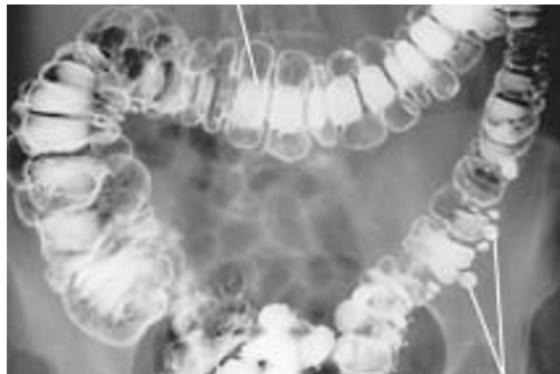
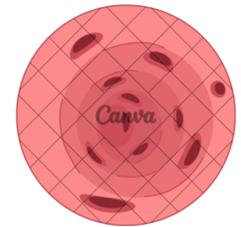
• Indications:

- » Lower GI bleed.
- » Recurrent abdominal pain and/or diarrhea.
- » Concern for underlying malignancy.

• Findings:

well-defined outpouching from the colonic wall.

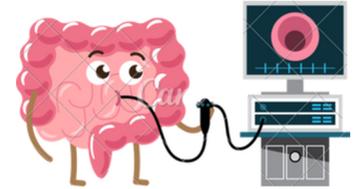
- Avoid if acute diverticulitis is suspected.
- Biopsy and histological analysis can be performed, if necessary.



Treatment

Bleeding usually clinically insignificant and stop spontaneously .

- **Endoscopic hemostasis** during colonoscopy (e.g., epinephrine injection, thermal coagulation, ligation).
- Angiography with vessel embolization.

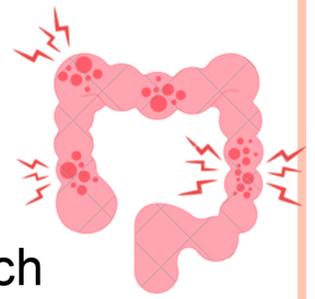


Complications

- 1. Hemorrhage:** Bleeding can occur when diverticula erode into blood vessels, leading to rectal bleeding.
- 2. Fistula:** An abnormal connection or passageway can form between the colon and another organ, such as the bladder or skin, due to inflammation or infection.
- 3. Inflammation (Diverticulitis):** The diverticula can become inflamed or infected, leading to a condition called diverticulitis, characterized by abdominal pain, fever, and changes in bowel habits.
- 4. Abscess:** A collection of pus can form near the inflamed diverticula, often requiring drainage or antibiotics.
- 5. Perforation**



2-Angiodysplasia



is a degenerative disorder of gastrointestinal (GI) **blood vessels** in which abnormal connections between **veins** and **capillaries** are formed, potentially leading to upper and/or **lower GI bleeding** of variable severity.

- The precise cause of angiodysplasia is unclear, but it is often linked to **von Willebrand disease**, **end-stage renal disease**, and the use of left ventricular assist devices.

Clinical features

Presentation and severity vary from occult to life-threatening upper or lower GI bleeding.

§ Clinical features of anemia
bleeding

- o Fatigue
- o Weakness
- o Dizziness
- o Shortness of breath
- o Tachycardia
- o Pallor



§ Clinical features of GI

- o Melena
- o Hematemesis
- o Hematochezia



Most patients with angiodysplasias present with chronic compensated episodic bleeding.



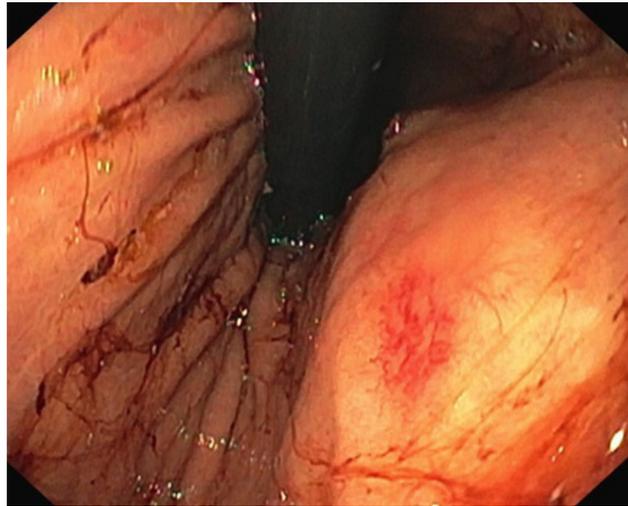
Diagnosis

- Diagnostic confirmation with endoscopy is preferred.
- Findings:
- Lesion characteristics :

📌 Vessel: flat, cherry-red, and with a fern-like pattern.

📌 Size: < 10 mm .

- The most common locations: [colon](#), [duodenum](#), and [jejunum](#).
- Approx. 40–60% of patients have > 1 lesion.



Imaging :

· Indications

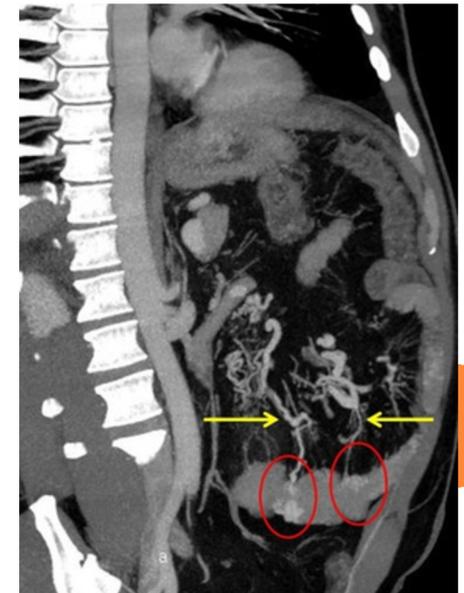
- o Recurrent bleeding and inconclusive results with all other techniques.
- o Endoscopy is unavailable or contraindicated.

· Modalities

- o Angiography (**gold-standard test**).
- o CT angiography.
- o MR angiography.

· Findings

- o Simultaneous arterial and early venous filling (suggests early shunting).
- o Dilated vasculature.
- o Contrast extravasation at the site of active bleeding.



Treatment

Spontaneous cessation of bleeding from angiodysplasia occurs in approx. **90%** of cases.

① Initial treatment with **colonoscopic therapy** is preferred.

- Argon plasma coagulation.
- Electrocoagulation.
- Clipping.
- Laser ablation



Treatment

② Angiographic therapy

- Indications include:
 - Lesions refractory to, or inaccessible via, endoscopic therapy
 - Endoscopy is contraindicated.
- Techniques
 - Embolization of the vessel
 - Vasopressin infusion

③ Surgical therapy

- Indications include:
 - Severe active bleeding
 - Recurrent chronic bleeding that requires multiple blood transfusions
- Technique
 - Partial surgical resection



3-Hemorrhoid (commonly known as piles)

arise from congestion of the internal and/or external venous plexuses around the anal canal.

They are extremely common in adults.

The etiology is unknown, although they are associated with increased intra abdominal pressure i.e. : with constipation and straining, and may develop for the first time during pregnancy.

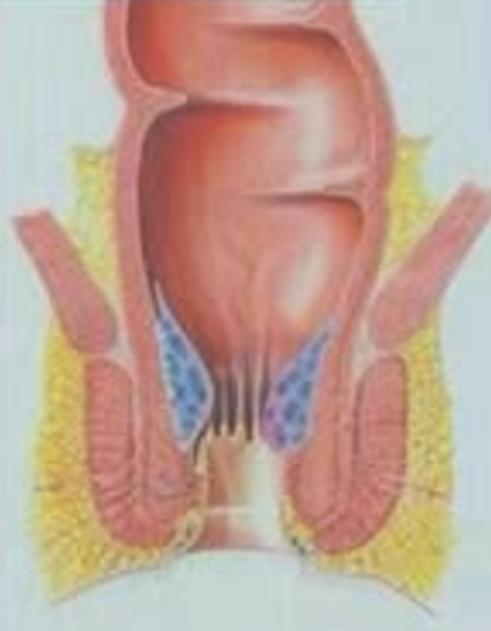
hemorrhoids are classified into :

Internal hemorrhoid : located proximal to dentate line ,
Usually **painless**, thus banding, ligation can be done.

External hemorrhoid : located distal to dentate line These are **painful**, usually self limited.

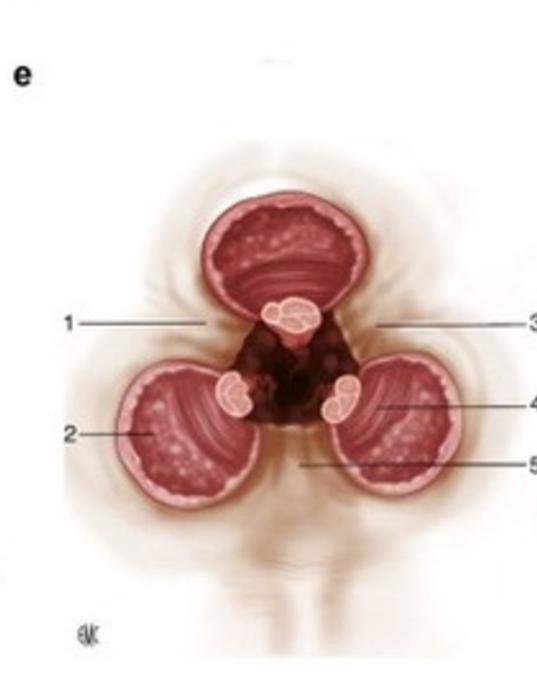
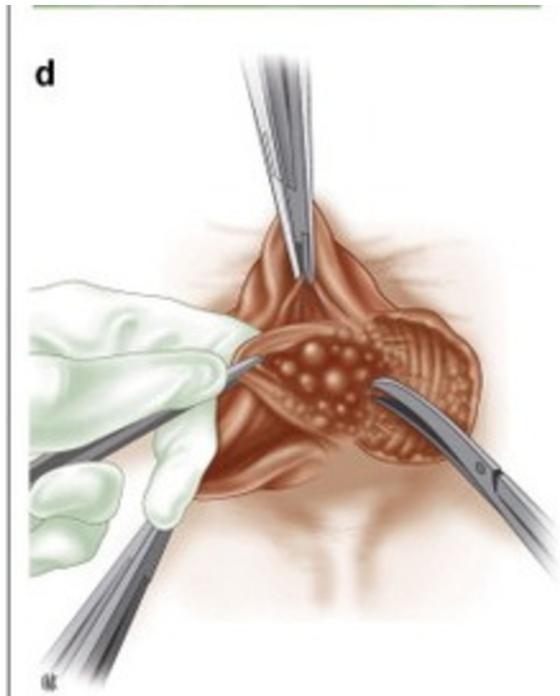
<p>1st degree</p>	<p>Painless bleeding, no prolapse</p>	<p>Medical therapy by dietary fiber, stool softeners, sitz bath Operative by rubber band ligation, infrared photocoagulation, sclerotherapy</p>
<p>2nd degree</p>	<p>Prolapse through anus during straining but reduces spontaneously</p>	<p>Same as above</p>
<p>3rd degree</p>	<p>Prolapse through anus, requires manual reduction</p>	<p>Rubber band ligation, sclerotherapy, operative hemorrhoidectomy</p>
<p>4th degree</p>	<p>Cannot be reduced, thrombosed</p>	<p>operative hemorrhoidectomy</p>

Grading of Haemorrhoids/Piles

Stage I	Stage II	Stage III	Stage IV
No protrusion of haemorrhoids, yet.	Protruding haemorrhoids that spontaneously reduce!	Protruding haemorrhoids, possible to push back in manually!	Protruding haemorrhoids that can't be pushed back in manually anymore !
			

Indications for Hemorrhoidectomy:

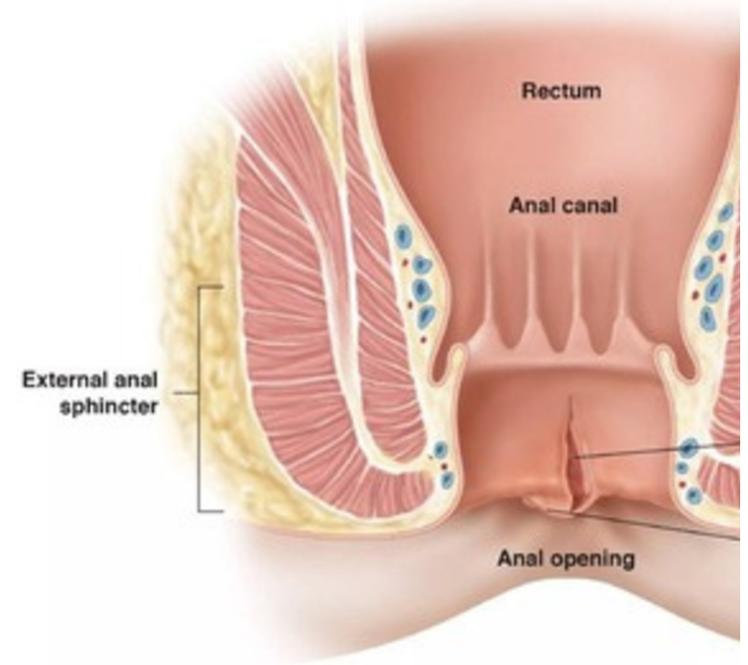
1. Third- and fourth-degree hemorrhoids
2. Non-cured second-degree hemorrhoids by non-operative treatments
3. Fibrosed hemorrhoids
4. Large hemorrhoidal bleeding sufficient to cause anemia



4-Anal Fissure

Small tear in the thin, moist tissue that lines the anus it is a cause of extremely painful bleeding per anus. Fissure is usually presenting with associate infection

- Most common site: **posterior midline** (less elasticity and increased density of longitudinal muscle extensions)
- - Causes and Risk Factors :
constipation, straining, childbirth, anal intercourse and passing large stool



Treatment

Conservative/medical treatment: 90% of cases resolved

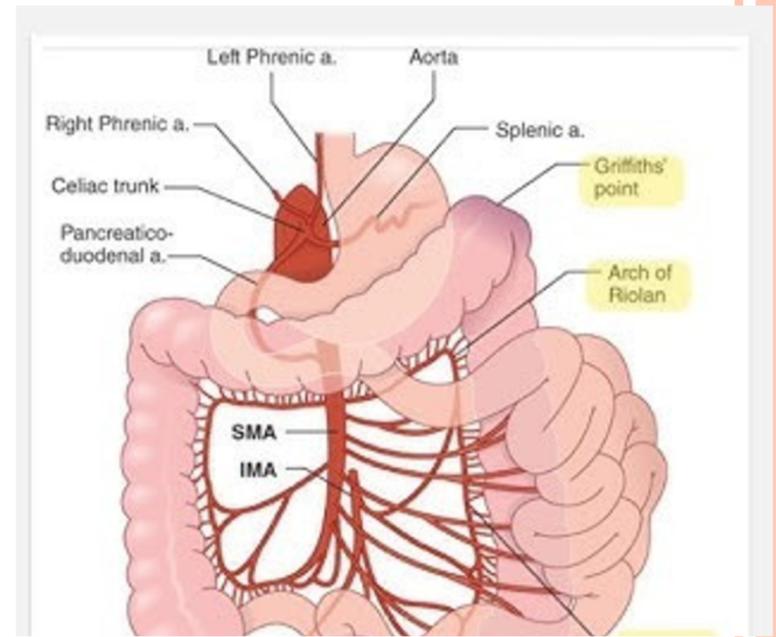
1. Dietary Changes -Increase Fiber Intake: High-fiber foods (fruits, vegetables, whole grains) help soften stools and reduce straining -Hydration
2. Stool Softeners (ex-docusate sodium)
3. Topical Treatments (to relax internal sphincter) - Topical Nitroglycerin, Calcium Channel Blockers (nifedipine), and Hydrocortisone cream
4. Warm Sitz Baths Surgical: lateral internal sphincterotomy



5- Ischemic colitis

Ischemic colitis arises from low flow rate to the large intestine due to narrowed or blocked blood vessels.

- Patients usually older than age 60 years
 - Watershed areas more often affected (e.g., splenic flexure, rectum)
 - **Symptoms:** include mild/diffuse abdominal pain, cramping, bloody diarrhea, severe hemodynamically instability and acidosis
 - **Diagnosed by:** clinical presentation, colonoscopy or CT scan
- Can be associated with estrogen use , hypercoagulable states, vasculitis.



Thank You

