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Research Article

**EXAMINATION AND DIFFERENTIAL DIAGNOSIS OF
LOWER GASTROINTESTINAL BLEEDING**

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Abstract:

GI bleeding is a symptom of digestive tracts disorder. This review explains the definition and etiologies of these condition along with the diagnosis methods of GI bleeding. We conducted search using electronic biomedical databases such as; Medline, and Embase, for studies published up to end of 2018 with English language concerning the thrombocytopenia in general, Following MeSh terms were used in our search strategy: "lower gastrointestinal bleeding", "GI bleeding", "differential diagnosis". Gastrointestinal (GI) bleeding is a term made use of for any kind of blood loss that happens within the GI system from mouth to anus. GI blood loss can be classified into upper and lower in origin. The ligament of Treitz is commonly used as the point to differentiate both. Bleeds proximal to the ligament are upper GI bleeds, and distal bleeds are lower GI hemorrhages. Classification right into one of the two groups is very important as it routes the assessment and management of the patient. GI bleeding can be brought on by a wide range of pathologies and they differ in beginning, area, risk and medical discussion. In patients with energetic GI blood loss that are unsteady, acute resuscitation should come before any examinations. Accurate clinical diagnosis is crucial in identifying the examination of option and particular therapy interventions. The correct analysis algorithm relies on a good understanding of the type of GI blood loss, risk examination and clinical presentation which might indicate the nature and source of blood loss.

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INTRODUCTION:

Gastrointestinal (GI) bleeding is a common issue doctors experience in the emergency division and in the primary care setting [1]. While GI blood loss can be possibly serious, it has actually been revealed that lots of instances can be safely taken care of on an outpatient basis [2]. GI can be challenging for any kind of medical professional [3]. A logical, reasoned strategy is necessary to successful management. At the Ochsner Clinic Foundation hospital, the majority of patients with gastrointestinal hemorrhage from a reduced source have been looked after by the staff of the Colon and Rectal Surgery Department.

Lower gastrointestinal hemorrhage describes a spectrum of intestinal blood loss that occurs distal to the ligament of Treitz. It might vary from occult blood loss or occasional identifying of blood to large lower intestinal hemorrhage. Massive intestinal hemorrhage typically produces hemodynamic compromise or symptomatic anemia (e.g., hematocrit <30%, transfusion needs [\geq 3- 5 units of blood/blood items], or orthostatic requiring resuscitation) [4]. This blood loss provides obstacles, as it can develop from any place in the intestinal system and may be periodic and vary in degree (varying from the passage of 100- 250 mL of blood, potentially a few clots and mucous, to copious bleeding with significant, self-limited hemorrhage, to substantial and continual hemorrhage connected with hypovolemia) [5]. Hemorrhage might provide as melena, which suggests bleeding from a resource in the proximal colon, small intestine, or stomach; or as hematochezia, which suggests massive left colonic hemorrhage or anal or rectal sources. Substantial top stomach hemorrhage might present with anal bleeding because of the blood's cathartic result and rapid intestinal transit. It is estimated that upper resources present as lower gastrointestinal blood loss in 10% to 15% of situations [4]. Co-morbidities usually make complex the management of gastrointestinal bleeding and should be thought about in the analysis and restorative stages of the care plan.

History and physical checkup do not predict patient requirements or clinical outcome, and diagnostic researches commonly are invasive procedures with minimal level of sensitivities and specificities. Patients on anticoagulants or antiplatelet agents for underlying cardiovascular conditions present grown difficulties when they experience reduced gastrointestinal massive hemorrhage. The exact medical diagnosis of GI bleeding counts on prompt resuscitation, initial threat evaluation, provisional clinical medical diagnosis complied with by proper definitive examination which makes it possible for specific treatments.

GI bleeding is a symptom of digestive tracts disorder. This review explains the definition and etiologies of these condition along with the diagnosis methods of GI bleeding.

METHODOLOGY:

We conducted search using electronic biomedical databases such as; Medline, and Embase, for studies published up to end of 2018 with English language concerning the thrombocytopenia in general, Following MeSh terms were used in our search strategy: "lower gastrointestinal bleeding", "GI bleeding", "differential diagnosis". more relevant studies were searched in the references list of included studies.

DISCUSSION:

- **DEFINITIONS**
- **Overt (acute) vs occult (chronic) vs obscure**

Although GI bleeding can be a result of benign pathology, serious hemorrhage, varices, ulceration and malignant neoplasms require to be taken into consideration and thoroughly left out [6]. Provided the vast array of underlying pathology and the differences in their proper diagnostic method, it is crucial for clinicians to define the kind of GI blood loss based on scientific presentation.

Relying on the rate of blood loss, GI bleeding can show up in numerous forms and can be identified as overt, occult or obscure. Obvious GI blood loss, otherwise referred to as acute GI blood loss, is visible and can present in the form of hematemesis, "coffee-ground" emesis, melena, or hematochezia. Occult or chronic GI bleeding as a result of microscopic hemorrhage can present as Hemocult-positive stools with or without iron deficiency anemia [7]. The American Gastroenterological Association specifies occult GI blood loss as the preliminary presentation of a positive fecal occult blood test (FOBT) result and/or iron-deficiency anemia when there is no evidence of noticeable blood loss to the patient or medical professional [8]. Obscure GI blood loss describes recurrent bleeding in which a resource is not determined after top endoscopy and colonoscopy. Obscure bleeding may be either obvious or occult [7].

Upper vs lower

Upper GI bleeding includes hemorrhage originating from the esophagus to the ligament of Treitz, at the duodenojejunal flexure [9]. Reduced GI bleeding is specified as bleeding that stems from a site distal to the ligament of Treitz [10]. In the last few years upper GI

bleeding has actually been redefined as bleeding above the ampulla of Vater within reach of an upper endoscopy; reduced GI blood loss has been better subdivided right into mid GI bleeding coming from the tiny digestive tract between the ampulla of Vater to the terminal ileum, and lower GI blood loss originating from the colon [8].

• ETIOLOGIES

The sources of acute LGIB and their regularity as reported in the literary works are detailed in table 1. Colonic diverticula appear to be the most regular source of hematochezia, complied with by

angiodysplasias, IBD and postpolypectomy bleeding. the reasons for chronic LGIB and their frequency are more difficult to establish, although they cause 18-30% of iron deficiency anemia, one of the most usual indication of chronic stomach bleeding (table 2). Chronic periodic passage of small amounts of noticeable red blood usually stems from rectal lesions, such as hemorrhoids or anal fissures. Otherwise, bleeding lesions are normally found in the rectum or distal colon. in middle-aged and older people, even more evaluation may be required, even if a rectal or anal lesion appears to be responsible for bleeding, to exclude an existing side-by-side colon neoplasm.

Table 1. Sources of hematochezia reported in the literature [11].

Source/finding	Frequency (%)
Diverticulum	17–40
Angiodysplasia	9–21
Colitis (ischemic, infectious, chronic IBD, radiation injury)	2–30
Neoplasia, postpolypectomy bleeding	11–14
Anorectal disease (including rectal varices)	4–10
Upper gastrointestinal bleeding	0–11
Small bowel bleeding	2–9

Table 2. Colonic causes of iron-deficiency anemia based on literature reports [12],[13].

Finding	Frequency (%)
Colon carcinoma	4.5–11
Angiodysplasia	0.9–8.5
Colon polyps	2.8–7.2
Colitis	1.4–2
Colonic causes in total	18–30

• PATHOPHYSIOLOGY

The diverticular disorder makes up over 40% of lower GI bleeds and often provides as pain-free hematochezia. More than 80% of reduced GI bleeds will certainly stop automatically, and overall mortality has been noted to be 2% to 4%. Diverticular bleeding typically repeats [14]. Consequently, very early recognition and management are critical. The frequency of diverticular disease rises in elderly patients, especially ages older than 80 years, patients with chronic constipation, and modified colonic motility. The left colon is usually more frequently impacted as being the resource of diverticular bleeds.

Around, one-third of patients with assumed reduced GI bleeds and heavy bleeding will have an upper GI bleed, specifically, if the patient presents with symptoms and signs of peptic ulcer disorder or recent (non-steroidal anti-inflammatory) NSAID usage.

Ischemic colitis occurs in the 20% of reduced GI bleeds and is extra widespread in the senior [15]. It takes place in reaction to decreased mesenteric flow to the colon because of decreased cardiac result, vasospasm, or atherosclerotic disorder. Non-thrombotic reasons typically influence the watershed locations of the bowel, especially, the splenic flexure. These non-occlusive illness processes normally fix with hydration and nonsurgical intervention. Occlusive or thromboembolic occasions can influence much bigger locations of the digestive tract and ought to be quickly assessed with mesenteric angiography. Patients with mesenteric ischemia need radiographic and/or medical assessment and intervention.

One of the most usual root cause of lower GI bleeds in patients more youthful than 50 years is anorectal diseases, especially, hemorrhoids. Inflammatory bowel disease (IBD) and NSAID usage must also be assessed in lower GI bleeds [16]. Other disorder

procedures professionals should think about include vascular ectasias which are flat, red mucosal lesions in the cecum and rising colon and stand for 10% of lower GI bleeds. Post-polypectomy blood loss is a lot more typical in patients older than 65 years with a polyp more than 1 cm^[15]. Bleeding is normally self-limited but can be delayed up to one week after the procedure.

• DIAGNOSIS OF LGIB

Initial Assessment, Resuscitation, and Stabilization

Patients with enormous lower gastrointestinal hemorrhage might show pallor, fatigue, angina, tachypnea, cardiac palpitations, postural hypotension, and syncope, which specify the importance of hemorrhage and the urgency of medical focus. First resuscitation entails placement of huge bore catheters for vascular access, hemodynamic monitoring (cardiac rhythm), and placement of a urinary system catheter. Evaluating for the presence of pre-pyloric, top gastric sources of bleeding is done via placement of a nasogastric tube, with return of bile on aspiration^[17]. The goal of resuscitation is to restore quantity and restore red blood cell deficiencies to keep oxygen delivery. On top of that, any kind of coagulopathies should be dealt with. Appropriate research laboratory research studies consist of a complete blood count, product electrolytes, a coagulation profile, and a type and crossmatch for blood elements.

The diagnostic evaluation begins with a digital anorectal exam and anoscopy. A rigid proctosigmoidoscopy enables the supervisor to evacuate the rectum of blood and clots. A complete mucosal assessment serves to omit internal hemorrhoids, anorectal solitary ulcers, neoplasms, and colitis. Recognition of a bleeding source typically allows treatment to control the hemorrhage, and this preoperative evaluation help in intraoperative management if a primary rectal anastomosis is needed.

After stabilization, the analysis evaluation proceeds with 3 alternatives: radionuclide imaging (nuclear scintigraphy), colonoscopy, and angiography. Colonoscopy and angiography offer therapeutic treatment while nuclear scanning is purely diagnostic. Decisions on the order of testing depend upon medical judgment, local expertise, and the extent or ongoing nature of the hemorrhage.

Patients can be subdivided into three general clinical classifications based on the history, physical, and initial laboratory information: 1) minor self-limited, 2) major self-limited, or 3) major ongoing. Significant continuous hemorrhage calls for timely treatment with angiography or surgical procedure^[17]. Minor, self-limited hemorrhage might undergo a colonic lavage and colonoscopy within 24 hrs. The management of

significant, self-limited hemorrhage creates the most controversy. Patients with this type of hemorrhage require an analysis test to establish if they call for punctual treatment or monitoring.

Endoscopy

Flexible endoscopy is now considered the mainstay for examination of acute and chronic colonic bleeding. the occurrence of severe problems is reduced (concerning 1 in 1,000 treatments). Patients need to be continually monitored throughout urgent endoscopy using ECG and noninvasive dimension of oxygen saturation. In case of hemodynamic instability, patients need to go through quantity resuscitation prior to endoscopy. In patients with hemochezia and concurrent hemodynamic instability, esophagogastroduodenoscopy (EGD) must be executed first to exclude a top intestinal blood loss source. or else, colonoscopy is advised as the initial step in the assessment of acute LGIB^[18]. The timing of colonoscopy after initial discussion differs among researches from 12 h to 48 h^[18]. Colonoscopy can establish the source and sort of blood loss, and can help to recognize patients with continuous hemorrhage or those that are at high risk of rebleeding. Furthermore, endoscopic hemostasis can be carried out, if essential.

The analysis return for immediate colonoscopy in acute LGIB is 89- 97%^[19]. Existing recommendations suggest comprehensive cleaning of the colon in acute LGIB, as this treatment facilitates endoscopic visualization, enhances diagnostic return, and enhances (presumably) the security of the treatment by lowering the risk of perforation^[20]. For optimal purge of the colon, the patient has to take in 3- 6l of a polyethylene glycol-based solution. Patients typically endure usage of 1- 2 l per hr. It might be handy to carry out a prokinetic antiemetic such as metoclopramide (10 mg intravenously) or to carry out the remedy with a nasogastric tube. Colonoscopy can be begun with the look of liquid discharge due to the fact that diluted blood and clots can be aspirated or removed. If the discharge becomes free of blood throughout the preparation, the endoscopic assessment can be done on an optional basis the complying with day. The cecum ought to be reached if whatsoever possible, because a considerable percentage of bleeding sites are located in the appropriate hemicolon. Streaming blood from over in the incurable ileum is a clear sign of a proximal bleeding site. in patients with extreme and ongoing blood loss, immediate colonoscopy has to often be carried out without purge. in patients with hemodynamic instability, an immediate angiography is advised. For chronic LGIB, colonoscopy and anoscopy should be performed first in patients with scant intermittent hemochezia or iron-deficiency

anemia. EGD should be accomplished in patients with iron-deficiency anemia if colonoscopy stops working to find the source of blood loss. If both colonoscopy and EGD fail to localize the source in acute and chronic GI blood loss, added endoscopic methods can be carried out to take a look at the small intestine. Push enteroscopy allows visualization of about 50- 120 centimeters of the proximal jejunum. Double-balloon enteroscopy can make the entire small intestine visible, specifically if bidirectional enteroscopy is executed- that is, if the range is presented successively by mouth and rectum. using wireless video capsule endoscopy, the little digestive tract can be entirely pictured in concerning 80% of situations ^[21].

Nonendoscopic methods

Nuclear scintigraphy

Nuclear scintigraphy is a sensitive technique for finding intestinal bleeding at a rate of 0.1 ml/min. the approach is a lot more sensitive, but less specific, than angiography ^[22]. The role of nuclear scans and, in particular, of technetium-99m-labeled erythrocytes is limited for obscure gastrointestinal bleeding. the major disadvantages are that nuclear imaging localizes bleeding just to a location of the abdomen which the intraluminal blood is moved away by digestive motility. When scans are positive within 2 h after shot of the identified erythrocytes, localization is proper in 95- 100% of situations. However, when scans declare after more than 2 h after shot, the accuracy decreases to 57- 67% ^[24]. Scintigraphy might be useful, particularly for persistent bleeding, when various other approaches have actually fallen short.

Radiology visceral

Angiography is estimated to just detect active bleeding when the rate goes to the very least 0.5-- 1ml/min ^[23]. The specificity of this procedure is 100%, however the level of sensitivity varies from 47% with acute LGIB to 30% with frequent bleeding ^[24]. Unfortunately, blood loss is often intermittent and might be sluggish, thus limiting discovery of the original sore. Angiography should be reserved for patients who have enormous blood loss that prevents colonoscopy, or for whom endoscopies were adverse. Visceral angiography has a complication rate of 9.3% ^[25]. Research studies have actually shown that CT angiography is extremely sensitive and certain for diagnosing colonic angiodysplasia ^[26]. This technique seems to be equal to visceral angiography in the discovery of acute gastrointestinal hemorrhage, showing precision prices of 54- 79% for colonic blood loss ^[27], ^[28]. There is no role for barium researches in the detection of acute IGIB. Simple abdominal radiography and/or Ct might be executed, relying on the professional discussion and suspected etiology

(such as ischemic or inflammatory colitis, or in cases where digestive tract obstruction or perforation are suspected). In cases of chronic IGIB, Ct colonography can be utilized to analyze the colon. However, it must be considered that small or flat sores such as angiodysplasias are normally not recognized by this approach.

CONCLUSION:

Gastrointestinal (GI) bleeding is a term made use of for any kind of blood loss that happens within the GI system from mouth to anus. GI blood loss can be classified into upper and lower in origin. The ligament of Treitz is commonly used as the point to differentiate both. Bleeds proximal to the ligament are upper GI bleeds, and distal bleeds are lower GI hemorrhages. Classification right into one of the two groups is very important as it routes the assessment and management of the patient. GI bleeding can be brought on by a wide range of pathologies and they differ in beginning, area, risk and medical discussion. In patients with energetic GI blood loss that are unsteady, acute resuscitation should come before any examinations. Accurate clinical diagnosis is crucial in identifying the examination of option and particular therapy interventions. The correct analysis algorithm relies on a good understanding of the type of GI blood loss, risk examination and clinical presentation which might indicate the nature and source of blood loss.

Common reasons for lower gastrointestinal hemorrhage consist of colonic diverticula, angiodysplasia, ischemic colitis, and inflammatory bowel disorder. Hemorrhage might additionally come from intestinal tumors or malignancies. Uncommon reasons for hemorrhaging consist of nonsteroidal anti-inflammatory drugs (NSAIDS), associated non-specific colitis, Meckel's diverticulum, and anorectal diseases.

Patients offering with lower GI bleeds can have differing symptoms and indications. Consequently, a comprehensive history is necessary. Patients can provide with scant bleeding to enormous hemorrhage. Trick details in the history need to consist of whether the bleeding is persistent or sporadic if there are connected signs and symptoms and a detailed evaluation of the patient's drugs including, antiplatelets, anticoagulants, and NSAIDs. The family history of colon cancer or inflammatory bowel disease (IBD) ought to likewise be noted.

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