Lower Gastrointestinal Bleeding

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KEYWORDS

• Lower gastrointestinal bleeding • Emergency • Surgery

KEY POINTS

- Most episodes of lower gastrointestinal bleeding stop spontaneously and can be effectively managed with common clinical tools.
- Computed tomography angiography is widely available and expeditious for localization of gastrointestinal bleeding.
- Resuscitative endovascular balloon occlusion of the aorta (REBOA) may temporize the unstable patient with gastrointestinal bleed, allowing definitive therapy.
- Standard upper and lower endoscopy allows diagnosis and therapeutic management for most presentations of gastrointestinal bleeding.

INTRODUCTION

Gastrointestinal bleeding, responsible for 612,000 hospital days and $1.2 billion in aggregate health care expenditures in 2009,[1] is a common clinical problem encountered by general surgeons. Hospitalization for gastrointestinal bleeding increased 22% between 2000 to 2009,[1] likely a consequence of an increasing elderly population and proliferating anticoagulant usage.

Hematochezia or melena are frequent clinical impetus for patients to seek evaluation. Although not definitive for localization, their presence in the absence of hematemesis raises the suspicion of lower gastrointestinal bleeding (LGIB), defined as gastrointestinal bleeding with a source distal to the ligament of Treitz. LGIB is associated with colonic sources, such as diverticulosis or angiodysplasia, but can include small bowel sources. LGIB outcomes are more favorable than upper gastrointestinal bleeding (UGIB) and 80% resolve spontaneously.[2] Less invasive efficacious interventions likely contributed to the decline in mortality and morbidity over the preceding 20 years.[3]

Because general surgeons have clinical expertise in hemorrhagic shock, critical care, vascular access, endoscopy, and definitive surgical interventions, they are

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well-equipped to manage LGIBs, particularly in resource-limited settings. Evaluation and management goals for LGIB are constant: resuscitate the patient, localize the source, control the bleeding, and prevent recurrence. We review diagnostic and management modalities the general surgeon should be prepared to execute when managing LGIB.

INITIAL EVALUATION

Bleeding acuteness, duration, number of episodes, pain, melena, heartburn, hematemesis, recent endoscopic, colorectal or aortic procedures, nonsteroidal anti-inflammatory drug (NSAID) use, smoking, and caffeine consumption may direct suspicions to an upper or lower etiology. Comorbid conditions such as heart disease, heart failure, chronic kidney disease, or cirrhosis may also suggest etiologies and affect management decisions.

Physical examination findings, such as irregularly irregular heart rhythm, spider angiomas, palmar erythema, scleral icterus, jaundice, caput medusa, or abdominal guarding may suggest etiologies and exacerbating factors. Because hemorrhoids were the most common etiology for hematochezia in one series of emergency department patients, rectal examination or anoscopy should be considered.[4]

Impaired mentation, confusion, stupor, agitation, obtundation, pallor, cyanosis, diaphoresis, tachypnea, accessory muscle use, extensive hematemesis, gross hematochezia, or objective findings, such as tachycardia, hypoxemia, or hypotension, suggest an unstable patient in need of urgent resuscitation.

Complete blood count, complete metabolic panel, ionized calcium, prothrombin time, international normalized ratio, partial thromboplastin time, fibrinogen, lactate, and arterial blood gas are considered based on severity of presentation. Thromboelastography allows rapid characterization of coagulation deficits or anticoagulant effect and may aid in targeting component blood therapy.

After initial workup, the patient may be categorized as stable or unstable to clarify the subsequent algorithm for localization and control. Patients not anticoagulated, with hemoglobin greater than 13 g/dL, and systolic blood pressure greater than 115 mm Hg, may be managed with interval endoscopy as an outpatient.[5] Other patients may be admitted to a level of care appropriate to the severity of presentation.

RESUSCITATION OF THE UNSTABLE PATIENT

Patients in extremis or pulseless may require initiation of cardiopulmonary resuscitation and consideration of dramatic salvage options. Like penetrating injuries, gastrointestinal bleeding is frequently a point source, and trauma management principles can be applied to catastrophic LGIB. Resuscitative thoracotomy allows rapid control of infra-diaphragmatic bleeding, though outcomes in LGIB are not reported and likely poor.

Resuscitative endovascular balloon occlusion of the aorta (REBOA), with relatively low cost and growing availability, is increasingly used for nontraumatic hemorrhage. REBOA for nontraumatic hemorrhage had a lower 24-hour mortality (19% vs 51%, $P = .001$) but prolonged critical care course and similar overall mortality (68% vs 64%) to traumatic hemorrhage.[6] Another report found a mortality rate of 36% (n = 11) despite 64% of patients presenting in arrest.[7] REBOA for salvage in life-threatening LGIB is feasible, and future data may elucidate the optimal application.

Unstable patients with a pulse may be initially managed following principles of trauma resuscitation. Supplementary oxygen will pre-oxygenate for possible airway control and optimize oxygen delivery. Pulse oximetry, cardiac rhythm, and blood