

Diverticular Disease

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CASE

- 81 y/o man with several hour history of painless BRBPR after heavy lifting
- ROS: no NSAID/ASA use; no h/o PUD
- PMH: glaucoma, HTN, inguinal hernia
- PSH: eye surgery, IHR
- Meds: Tenormin, Minoxidil, Catapres, Benicar
- NKDA
- FHx: negative for cancer; positive for CVA
- SHx: Denied smoking/alcohol/illicit drugs

CASE

- VS: T 98.1, P 118, BP 203/95, RR 18, 97% RA
- Gen: mild distress
- HEENT: wnl
- CV: irregular
- Resp: CTAB
- GI: soft/NT/ND
- Rectal: blood in rectal vault; no hemorrhoids
- GU: wnl
- Neuro: wnl

CASE

- Labs:

	12.5	
9.4		225
	37.2	

142	109	25	96
4.2	23	1.02	9.1

LFTs 0.8/ 68/ 15/ 10

- GI consult: Hct dropped to 30.4 over 16 hours. HDS.
Planned colonoscopy and EGD
 - EGD: 5 cm hiatal hernia; benign gastric fundic polyps; otherwise esophagus to duodenal bulb unremarkable
 - C-scope: pandiverticulosis with old blood throughout colon and distal TI; proximal ileum without blood

CASE

- Tagged RBC scan: positive for active bleeding in cecum/ascending colon
- Multiple transfusions, with continued decline in Hct
- Surgery: **laparoscopic assisted total abdominal colectomy**
- Pathology pending

Topic

- LGIB
- Diverticular disease

LGIB

- Definiton: bleeding distal to ligament of Treitz
- Hematochezia
 - Most common cause: UGIB
 - Initial evaluation:
 - NGT aspiration: bilious vs. bloody
 - EGD
- Melena
 - Indicates UGIB

LGIB

- Once you have ruled out UGIB....
...most common cause of LGIB is.....**diverticular disease!**
- Minor: stable vital signs/workup outpatient
- Major: abnormal VS, altered LOC, > 2 U PRBCs
- Massive: >10 Units

LGIB

Source of Bleeding	Percent
Colonic diverticula	32.7
Hemorrhoids	27.1
Cancer	8.1
Inflammatory bowel disease	6.7
Angiodysplasia	5.3
Polyps	4.9
Ischemic colitis	4.5
Rectal ulcer	2.4
Post polypectomy	0.6
Miscellaneous	7.7

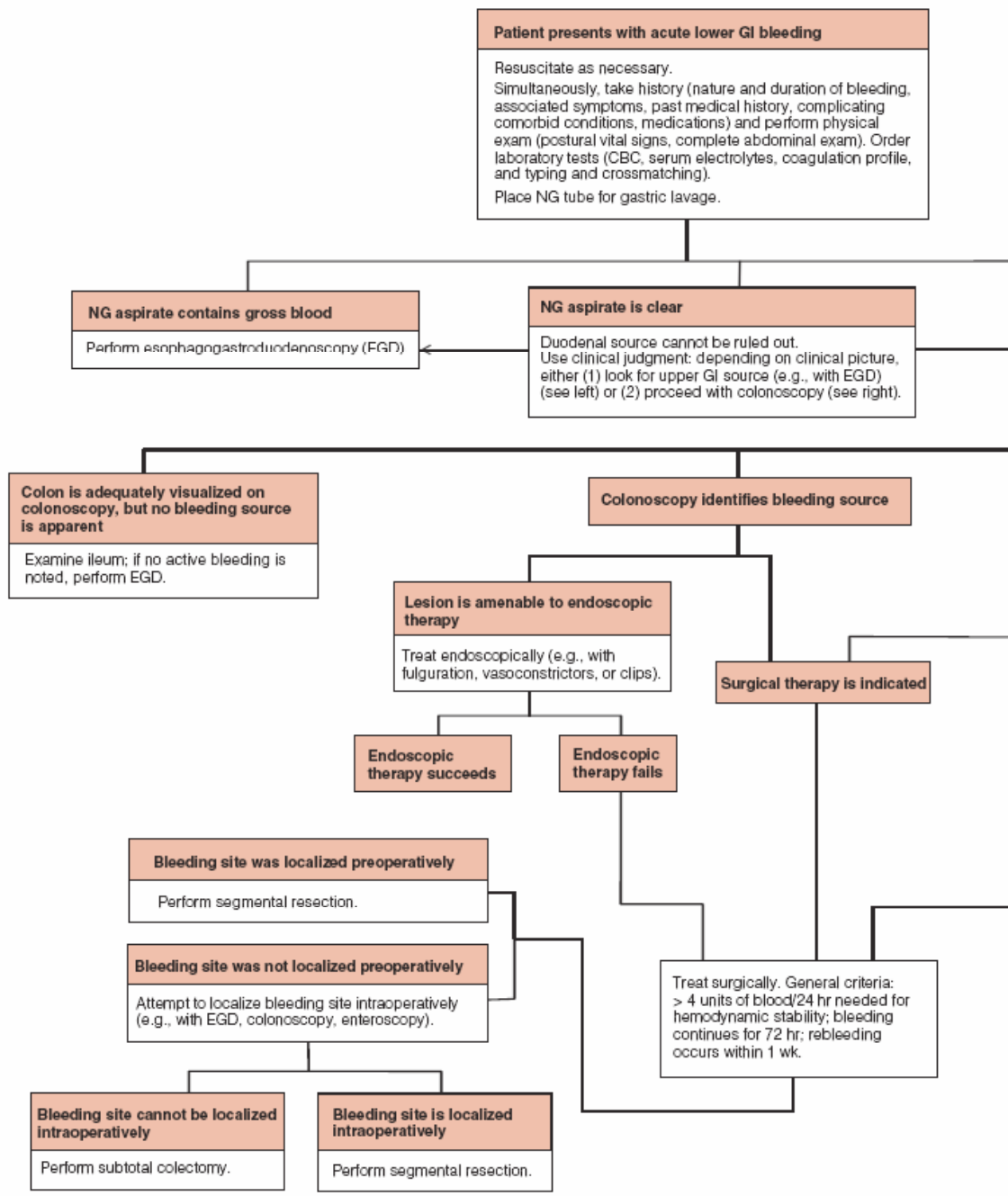
Source: Cameron. *Current Surgical Therapy*. 9th ed.

LGIB—Evaluation/Assessment

- Emergent exploratory laparotomy
- Urgent Nonoperative Evaluation
 - Colonoscopy
 - Tagged RBC scan (0.1 ml/min)
 - Mesenteric angiography (0.5 ml/min)
- Nonemergent Operation
 - Hemicolectomy
 - TAC (total abdominal colectomy)

LGIB—Evaluation/Assessment

- After bleeding ceases
 - Colonoscopy: if normal, presume SB origin
 - Push enteroscopy
 - Capsule endoscopy



Patient presents with acute lower GI bleeding

Resuscitate as necessary.
 Simultaneously, take history (nature and duration of bleeding, associated symptoms, past medical history, complicating comorbid conditions, medications) and perform physical exam (postural vital signs, complete abdominal exam). Order laboratory tests (CBC, serum electrolytes, coagulation profile, and typing and crossmatching).
 Place NG tube for gastric lavage.

NG aspirate contains gross blood

Perform esophagogastroduodenoscopy (EGD)

NG aspirate is clear

Duodenal source cannot be ruled out. Use clinical judgment: depending on clinical picture, either (1) look for upper GI source (e.g., with EGD) (see left) or (2) proceed with colonoscopy (see right).

Colon is adequately visualized on colonoscopy, but no bleeding source is apparent

Examine ileum; if no active bleeding is noted, perform EGD.

Colonoscopy identifies bleeding source

Lesion is amenable to endoscopic therapy

Treat endoscopically (e.g., with fulguration, vasoconstrictors, or clips).

Surgical therapy is indicated

Endoscopic therapy succeeds

Endoscopic therapy fails

Bleeding site was localized preoperatively

Perform segmental resection.

Bleeding site was not localized preoperatively

Attempt to localize bleeding site intraoperatively (e.g., with EGD, colonoscopy, enteroscopy).

Bleeding site cannot be localized intraoperatively

Perform subtotal colectomy.

Bleeding site is localized intraoperatively

Perform segmental resection.

Treat surgically. General criteria: > 4 units of blood/24 hr needed for hemodynamic stability; bleeding continues for 72 hr; rebleeding occurs within 1 wk.

DIVERTICULAR DISEASE

- Diverticulosis
 - What are they and where on colon do they occur?
 - A: outpouchings, usually occurring at the site where blood vessels penetrate the bowel wall
- Diverticulitis
 - Inflammation/infection around colonic diverticulum

Diverticulosis

- 50% of massive LGIB
- Stops spontaneously in more than 70% cases
- If source of bleeding not known
 - Blind subtotal/total colectomy with ileorectal anastomosis
 - Lesser segmental resections associated with 30% rebleeding

Diverticulitis

- Uncomplicated: absence of abscess, free perforation, fistulization, stenosis
 - Presentation: pain, fever, leukocytosis, mass
 - Diagnosis: clinical with mild forms
 - Management:
 - Bowel rest
 - Antibiotics (which ones?)
 - What percent resolve without recurrence? 70%
 - Elective colonoscopy after 6-8 weeks
 - Goal w/ surgical resection: remove diseased segment and resect remaining distal sigmoid colon down to rectum

Diverticulitis: Indications for Surgery

Strictly Indicated by Available Literature	Available Literature Conflicting	Previous Indications No Longer Well Supported by Available Data
Diffuse peritonitis	Following successful percutaneous drainage of abscess	Uncomplicated first episode, even in patients aged <50
Free perforation		
Obstruction		
Stricture		
Fistula		
Immunocompromised patients		
> 4 uncomplicated episodes		

Source: Cameron. *Current Surgical Therapy*. 9th ed.

Complicated Diverticulitis

- Associated with abscess formation, free perforation, fistula, stenosis
- Hinchey: Clinical staging for perforated diverticulitis

Clinical Staging of Perforated Diverticulitis

	Hinchey Staging (1978)	Hughes/Cuthbertson/ Carden Staging (1963)
Stage I	<u>Pericolic</u> or intramesenteric abscess	Local peritonitis
Stage II	Walled-off <u>pelvic</u> abscess	Local pericolic or pelvic abscess
Stage III	Generalized <u>purulent peritonitis</u> caused by <u>rupture</u> of an <u>abscess</u> into general abdominal cavity	Generalized peritonitis caused by ruptured pericolic or pelvic abscess
Stage IV	Generalized fecal <u>peritonitis</u> caused by <u>free perforation</u>	General peritonitis caused by free perforation of the colon

Source: Cameron. *Current Surgical Therapy*. 9th ed.

Complicated Diverticulitis

- Stage I and II (contained perforation)
 - IV antibiotics & observation possibly for Stage I
 - PCD for those who fail to improve rapidly
 - Then elective colonoscopy at 6-8 weeks
- Stage III and IV (free perforation)
 - shock, generalized peritonitis, free air
 - Aggressive fluid resuscitation
 - Broad-spectrum antibiotics
 - Urgent operative management

Principles of Surgical Resection

- Perform primary resection
- Proximal resection margin should be normal colon without palpable hypertrophy of muscularis layer
- Distal resection margin must be in proximal rectum, where tenia coli coalesce
 - Exceptions: Unstable patient; mucus fistula
- Not necessary to resect all diverticulae-bearing proximal colon
- Oncologic operation if cancer not excluded preoperatively by endoscopy
- Ureteral stents
- If complete distal sigmoid resection not done, document and tell the patient

Complications continued

- Abscess (already talked about)
- Fistula
 - Most common: colovesical
- Stenosis/Obstruction

REFERENCES

- Cameron. *Current Surgical Therapy*. 9th ed.
- Townsend. *Atlas of General Surgical Techniques*.