

Diagnostic Error in a Patient with Life-Threatening Anemia & Severe Gastrointestinal Hemorrhage

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Learning Objective

Identify factors likely contributing to a *diagnostic error* in a hospitalized patient with life-threatening gastrointestinal bleeding from the Utility of Predictive Systems in Diagnostic Errors (UPSIDE) Study

Case Presentation

History of Present Illness

- 76 year-old woman with coronary artery disease, hypertension, and chronic kidney disease presented to the ER with one-day of profound generalized weakness and dyspnea on exertion
- PMH: Diverticulosis on two prior colonoscopies
- Medications: Aspirin 81 mg BID status-post left total hip arthroplasty performed three weeks prior to presentation; no other NSAID, antiplatelet or anticoagulant use
- ROS: No fever, cough, chest or abdominal pain, hematemesis, melena, hematochezia, or hematuria

ER Course

- Vitals: Afebrile, BP 81/49, HR 60, RR 18, SPO2 100% RA
- Exam: Significant for left thigh edema
- Labs on admission (*baseline values*)

6.57	4.3 (11.7)	240	142	107	81 (45)	114	8.5	15
	13.9 (33.4)		4.1	26	1.99 (1.43)		5.1	10
							3.0	64
								0.2

- MCV 100.0 (89.8)
- PT INR 14.7; 1.2
- Iron panel, B12, folate, LDH, and haptoglobin were normal
- Lactate 0.8
- Troponin HS 62, 56

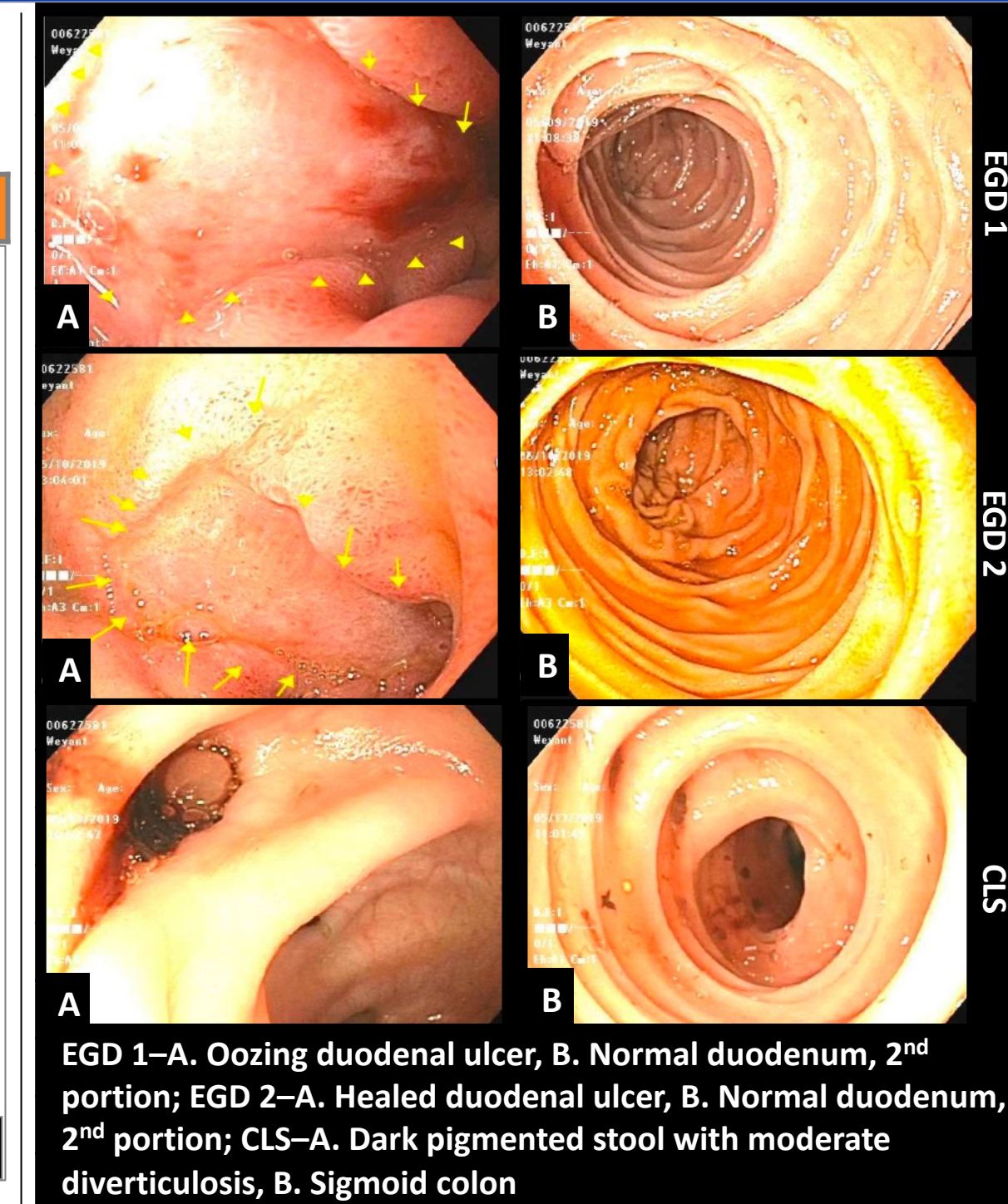
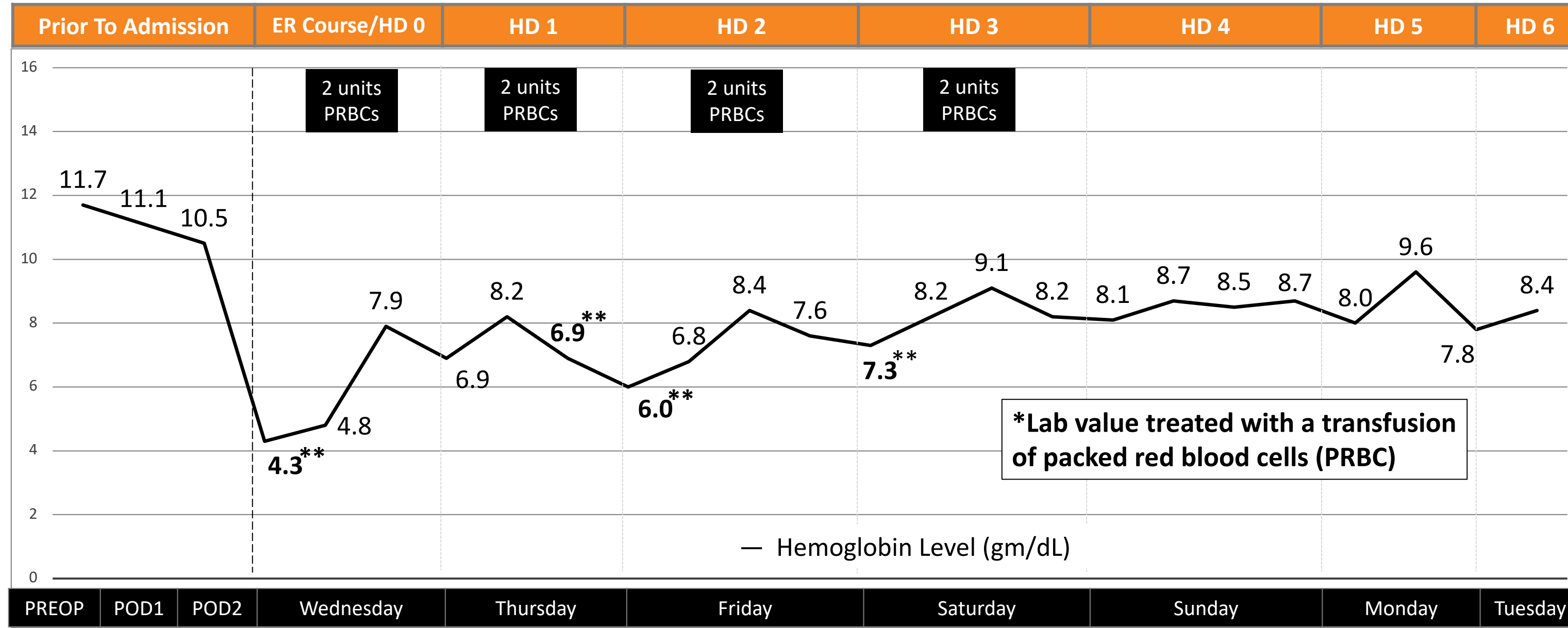
- Studies: Fecal occult blood test was **positive**; CT head was negative; CT Abdomen/Pelvis revealed **colonic diverticulosis*** (as shown)



*ER Working Diagnosis: Diverticular Bleeding

Labs and Imaging

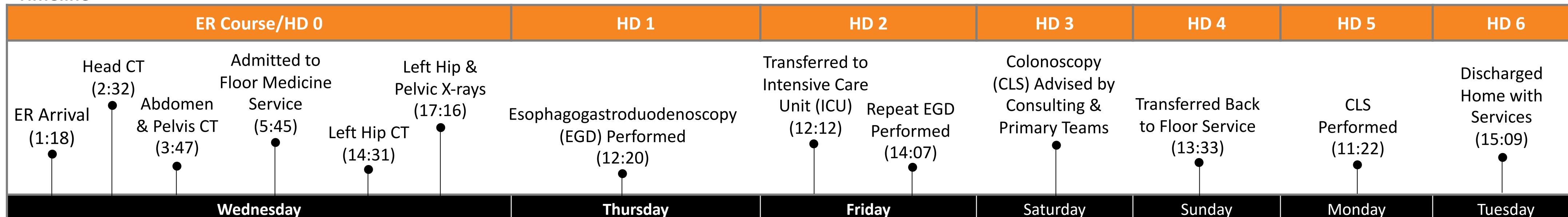
Hemoglobin Trend [Total Blood Administration: 8 units (2.58L)]



Hospital Course

- Hospital Day 0:** Admitting Medicine team suspected *left thigh hematoma* as the primary bleeding source and consulted Orthopedic Surgery. Hip imaging showed a *postoperative seroma* and incidental *fracture*. Gastroenterology was consulted and discovered the patient was passing "darker" stools post-surgery.
- Hospital Day 1:** Urgent EGD was pursued given suspected *upper GI bleed* (UGIB) and showed a *single oozing superficial duodenal ulcer* and diminutive nonbleeding gastric erosions
- Hospital Day 2:** After passing several *black and then bright red* stools overnight, the patient became hemodynamically unstable (post-transfusion hemoglobin 8.2 gm/dL → 6.0 gm/dL). General Surgery was consulted in the ICU for possible massive UGIB; repeat EGD was *negative*.
- Hospital Days 3-5:** Colonoscopy, advised HD3 and performed HD5, revealed diffuse *moderate diverticulosis with stigmata of recent bleeding*
- Final Diagnosis:** *Severe gastrointestinal hemorrhage likely secondary to diverticular source, preceded by a subacute duodenal bleed*

Timeline



Discussion

- The *missed opportunity* to make a *timely diagnosis* of concurrent diverticular bleeding constitutes a **diagnostic error**
- Interval ICU course and protracted length of stay suggest **temporary patient harm**

Factors Likely Contributing to a *Delayed Diagnosis* in This Encounter

- Initial physical exam findings (thigh edema) were likely overvalued
 - ER providers' concerns for lower GI bleed (LGIB) were dismissed in favor of a low-yield evaluation to exclude left thigh hematoma
- "Anchoring" on an upper GI bleeding source (UGIB)
 - Confirmation of an UGIB (Occam's Razor) may have biased clinicians against pursuing a second diagnosis (Hickam's Dictum)
- Suboptimal weighing of data as evidenced by
 - Failure to pursue early colonoscopy despite severe anemia and known chronic diverticulosis
 - Life-threatening anemia attributed to subacute EGD findings
 - Second EGD prioritized over colonoscopy despite interval hematochezia being potentially pathognomonic for LGIB
- Suboptimal collaboration & shared decision-making among teams
 - Differential diagnosis not expanded to diverticular bleeding by members of the primary or consulting teams until HD3
 - Possible over-reliance on consultants to drive diagnostic evaluation by primary Medicine team
- Barriers to non-urgent weekend procedures
 - Once advised, colonoscopy was delayed by another 2 days
 - Possibly diminished the overall diagnostic yield of the procedure

Conclusions

- Final diagnosis of *concurrent LGIB* inappropriately delayed
 - Historical and initial diagnostic data suggested >1 distinct bleeding source
- Diagnostic process likely hindered by flawed clinical reasoning during the early hospital course and suboptimal collaboration among teams
- Same-day EGD and colonoscopy may have expedited care
 - Cost effective; well tolerated in older adults (age ≥65)

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