Kaplan USMLE Step 3 prep: Boy has rectal bleeding, abdominal pain

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If you’re preparing for the United States Medical Licensing Examination® (USMLE®) Step 3 exam, you might want to know which questions are most often missed by test-prep takers. Check out this example from Kaplan Medical, and read an expert explanation of the answer. Also check out all posts in this series.

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This month’s stumper

A 10-year-old boy is admitted to the pediatrics unit with rectal bleeding and right lower quadrant abdominal pain. He has no significant past medical history. Vital signs are temperature 37.2 ºC (99 ºF), blood pressure 90/40 mm Hg, pulse 80 beats a minute, and respirations 11 breaths per minute. Physical examination is normal. Rectal examination reveals bright red blood, but no other abnormalities. A colonoscopy extending to the ileocecal valve is normal except for a moderate amount of fresh blood. Nasogastric tube placement does not reveal blood.

Which of the following is the next step in management?

A. Abdominal angiography.

B. Nuclear medicine technetium scan.

C. Sigmoidoscopy.
D. Small bowel follow-through.

E. Upper gastrointestinal (GI) endoscopy.

The correct answer is B.

**Kaplan Medical explains why**

Lower GI bleed in a child with a negative endoscopy is suspicious for a Meckel's diverticulum (MD). MD occurs in 2% of the population and 2% of cases are symptomatic. They occur 2 feet from the ileocecal valve, are usually 2 inches in length, and contain two types of mucosa (gastric and pancreatic). An MD is a true diverticulum from the antimesenteric border of the small bowel and is the most common congenital abnormality of the GI tract. It is usually asymptomatic though not always. It
most frequently occurs in children younger than 12 years old. Bleeding may either be pronounced, as in this case, or present as a subtle anemia. A technetium-99m pertechnetate scan is about 90% accurate in its diagnosis. Presentation may be bleeding (50%) or obstruction (25%).

Why the other answers are wrong

Choice A: Abdominal angiography is only useful in the unstable patient with a rising pulse and potentially, falling blood pressure. In this case, the patient is hemodynamically stable, and a nuclear medicine technetium scan is appropriate.

Choice C: Sigmoidoscopy is not necessary, as it will offer no more information than the previously performed colonoscopy.

Choice D: Small bowel follow-through sometimes reveals a Meckel's diverticulum in asymptomatic patients. It is not the study of choice in this symptomatic patient.

Choice E: Upper GI endoscopy would not be appropriate as this patient is having lower gastrointestinal bleeding evidenced by the nasogastric tube placement showing no blood.

For more prep questions on USMLE Steps 1, 2 and 3, view other posts in this series.