PERSPECTIVE

LESS IS MORE

False-Positive Results From a Diagnostic Colonoscopy

A Teachable Moment

Leslie Sheu, MD
Department of Internal Medicine, University of California, San Francisco.

Emily Welsh Gottenborg, MD
Department of Internal Medicine, University of California, San Francisco.

A man in his late 20s with a history of posttraumatic stress disorder (PTSD) and depression presented to his primary care clinician (PCP) with chronic diarrhea for years accompanied by intermittent hematochezia.

Story From the Frontlines

The patient had no other associated symptoms, such as weight loss, fevers, abdominal pain, joint pain, or rashes, nor any family history for inflammatory bowel disease (IBD) or colorectal malignant diseases that were a cause for concern. He also reported that his diarrhea was exacerbated by dairy intake, which he had not eliminated from his diet, and by stressful situations. Although his PCP suspected that his isolated events of scant hematochezia were secondary to an anorectal source and that his diarrhea was due to irritable bowel syndrome (IBS), which had not yet been properly addressed, the patient was referred directly for a diagnostic colonoscopy after he declined an in-office rectal examination and anoscopy. Findings from the colonoscopy were grossly normal, other than a single 2-mm, benign-appearing polyp in the rectum, which was biopsied. Surprisingly, the biopsy result returned as "high-grade B-cell lymphoma."

Given his remote residence, the patient was admitted to the hospital for an expedited workup of lymphoma. While an inpatient, he underwent multiple laboratory tests, a positron electron tomographic–computed tomographic imaging scan, and a bone marrow biopsy. Findings from all of these tests, as well as his vital signs and examination, were normal. This led the diagnosis of lymphoma to be further questioned. On rereview by the pathology department, the rectal biopsy specimen was now thought to actually represent a normal fragmented germinal center. The patient was informed that he did not actually have cancer, weeks after the initial diagnosis, and that his diarrhea and hematochezia were due to IBS and hemorrhoids, respectively. Further review of his medical chart indicated that the patient had undergone a workup for food allergies 2 years prior, which revealed multiple food allergies, including allergies to wheat, corn, and peanuts. An elimination diet had never been tried or recommended in the past.

After this experience, the patient stated he would have agreed to an elimination diet, rectal examination, and anoscopy if he had understood what information his physicians could have obtained from these initial tests, prior to pursuing a more invasive option.

Teachable Moment

This patient was directly referred for a diagnostic colonoscopy as workup for chronic diarrhea and hematochezia. Although a colonoscopy may eventually be indicated for the workup of chronic diarrhea, an endoscopic evaluation should be considered for patients with persistent symptoms after inconclusive diagnosis following routine blood and stool tests, or failure to respond to empirical therapy, per the American Society for Gastrointestinal Endoscopy.[1] Empirical treatment for IBS or food intolerances and a less invasive workup may have led to an explanation and resolution of this young man's symptoms and spared him a colonoscopy. Furthermore, flexible sigmoidoscopy is a suitable initial investigation for the evaluation of chronic diarrhea, with a consideration of colonoscopy if the findings are inconclusive or if IBD is suspected.[1,2]

The role of colonoscopy for isolated episodes of scant hematochezia is also not clearly indicated. Because most patients with scant hematochezia have an anorectal or distal colonic source of bleeding, the initial evaluation in young, healthy patients should be digital rectal examination and sigmoidoscopy, with or without anoscopy, per the American Society for Gastrointestinal Endoscopy.[3] If a source is found, a colonoscopy is not indicated.[3] Multiple trials are consistent with this recommendation. If this patient had undergone a rectal examination and anoscopy, he would likely have avoided a biopsy of a benign-appearing lesion and the subsequent dramatic course of events.

In this case, pathologic examination, often considered the gold standard for diagnosis, resulted in a false-positive result leading to a cascade of expensive and potentially harmful events. Not only did the subsequent workup result in unnecessary financial costs for the health care system, but, more important, the false-positive finding caused the patient psychological distress. Studies of patients misdiagnosed as having breast cancer or human immunodeficiency virus on routine screening have found that the psychological effect can persist for at least 3 years and cause considerable morbidity.[4-6]

The risks of overtesting and overdiagnosis in the age of technological advances are being increasingly recognized.[7] This case illustrates an example in which a conservative approach with more detailed history and physical examination may have prevented the downstream effects of false-positive results from unnecessary tests.

Corresponding Author: Emily Welsh Gottenborg, MD, Department of Internal Medicine, Quality Improvement and Patient Safety, University of California, San Francisco, 505 Parnassus Ave, M987, San Francisco, CA 94143 (Emily.Gottenborg@ucsf.edu).

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1. Shen B, Khan K, Ikenberry SO, et al; ASGE Standards of Practice Committee. The role of endoscopy in the management of patients with diarrhea. *Gastrointest Endosc*. 2010;71(6):887-892.

2. American Gastroenterological Association medical position statement: guidelines for the evaluation and management of chronic diarrhea. *Gastroenterology*. 1999;116(6):1461-1463.

3. Davila RE, Rajan E, Adler DG, et al; Standards of Practice Committee. ASGE Guideline: the role of endoscopy in the patient with lower-GI bleeding. *Gastrointest Endosc*. 2005;62(5):656-660.

4. Bond M, Pavey T, Welch K, et al. Systematic review of the psychological consequences of false-positive screening mammograms. *Health Technol Assess*. 2013;17(13):1-170, v-vi.

5. Brodersen J, Siersma VD. Long-term psychosocial consequences of false-positive screening mammography. *Ann Fam Med*. 2013;11(2):106-115.

6. Bhattacharya R, Barton S, Catalan J. When good news is bad news: psychological impact of false-positive diagnosis of HIV. *AIDS Care*. 2008;20(5):560-564.

7. Moynihan R, Doust J, Henry D. Preventing overdiagnosis: how to stop harming the healthy. *BMJ*. 2012;344:e3502.

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