

Consider colonoscopy for young patients with hematochezia

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Practice recommendations

- Nearly 12% of younger patients reporting rectal bleeding in this study had colon adenomas or cancer; thus, strong consideration should be given to colonoscopy in such individuals.
- Colonoscopy is a valuable diagnostic test and can help establish the source of rectal bleeding in nearly 80% of younger patients.

Abstract

Background Hematochezia is a common complaint in adult patients aged <50 years. Most studies of lower endoscopy for rectal bleeding have concentrated on older patients or have failed to mention the location of lesions.

Objective To determine the findings of complete colonoscopy in adults younger than 50 years with rectal bleeding.

Methods Data were retrieved from medical records and included demographics, indications, endoscopic findings, and histology. Lesions were

labeled according to location: proximal to the splenic flexure or distal to (and including) the splenic flexure. Excluded were those with a history of colitis, colorectal cancer, polyps, anemia, significant weight loss, severe bleeding, or strong family history of colorectal cancer.

Results The study included 223 patients with rectal bleeding aged <50 years who had undergone a colonoscopy. Normal findings were recorded for 48 (21.5%). Four (1.8%) were diagnosed with cancer in the distal colon, and 22 (9.9%) were found to have colon adenomas, 6 of whom had proximal adenomas only. Hemorrhoids were present in 135 patients (60.5%). Other findings included colitis, angiodysplasia, diverticulosis, anal fissures, and rectal ulcers.

Conclusions Colon neoplasms may be present even in younger adults with non-urgent rectal bleeding. Though most findings were benign and located in the distal colon, colonoscopy should be strongly considered for this patient group.

The role of colonoscopy is well established for patients aged more than 50 years with positive results on the fecal occult blood test.¹⁻³ For this population, colonoscopy has been shown to reduce mortality from colorectal cancer,

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Colonoscopy has a small risk of complications and imposes greater discomfort than flexible sigmoidoscopy

the second leading cause of cancer-related death in the United States. Colonoscopy has also been useful for diagnosing and treating lower gastrointestinal (GI) bleeding in older persons.⁴⁻¹⁰

Some investigators have suggested the entire colon should be visualized in all patients with rectal bleeding.⁴⁻¹¹ Use of investigative colonoscopy has increased dramatically in recent years, particularly for younger patients, while use of sigmoidoscopy has declined.¹²

Most of the literature on the investigation of rectal bleeding does not stratify patients by age.^{4-8,13-23} Hence, there is no consensus on the proper evaluation of younger adults with rectal bleeding. The literature generally favors colonoscopy over sigmoidoscopy. But for adults aged younger than 50 years, data are sparse.

Rectal bleeding is common among younger patients

In a survey of patients aged 20 to 40 years, a history of rectal bleeding was reported in nearly 20%.²⁴ The concern with rectal bleeding is that it may indicate potentially serious disease, including colorectal cancer.

Deciding whether to subject a younger adult with non-urgent rectal bleeding to full colonoscopy can be difficult. A valid concern is that the incidence of colon neoplasms may be too low in younger adults to justify the widespread and costly use of colonoscopy. Colonoscopy has a small but finite risk of complications and imposes higher costs, greater discomfort, and more inconvenience for the patient than flexible sigmoidoscopy. On the other hand, the possibility of missing a neoplasm cannot be discounted.

The aim of this study was to review the diagnostic findings of colonoscopy in adults younger than 50 years who had non-urgent rectal bleeding (without alarm symptoms or signs).

■ METHODS

Patients

We included all consecutive patients younger than 50 years who underwent colonoscopy for rectal bleeding at the University of Utah Medical Center or Salt Lake City Veterans Administration Medical Center between March 1997 and November 1999. Rectal bleeding was defined as the passage of bright blood on or within the stool, onto toilet paper, or into the toilet bowl. Patients were excluded if they had a history of colitis, colorectal cancer or polyps, severe bleeding requiring transfusion or hospitalization, unexplained weight loss greater than 5 pounds, iron-deficiency anemia, or a strong family history of colorectal cancer (at least 2 first-degree family members with colorectal cancer or 1 first-degree relative with colorectal cancer before the age of 50 years).

Data collection

Data were collected from medical records retrospectively. Patient demographics, indications for colonoscopy, endoscopic findings, and histology were retrieved.

Endoscopy

Gastroenterology faculty, or fellows under close supervision by the faculty, performed all endoscopic examinations. Informed written consent was obtained from each patient before every procedure. All endoscopic abnormalities were noted and biopsied if indicated, and all polyps were biopsied and removed. The distal colon was defined as that portion from the rectum through the splenic flexure.

■ RESULTS

Two hundred twenty-three patients younger than 50 years with rectal bleeding underwent complete colonoscopy to the cecum or terminal ileum. Of the 223 patients, 170 (76%) were evaluated at the University of Utah Medical Center, and 53 (24%) were evaluated at the VA Medical Center. No major complications (hemorrhage, perforation, hypoxia) directly related to endoscopy were noted.

The **Table** summarizes colonoscopy findings.

TABLE

Colonoscopy findings in 223 patients with rectal bleeding

Finding	Proximal	Distal	Total (%)
Carcinoma	0	4	4 (1.8)
Colitis	7	13	13 (5.8)
Tubular adenomas ≥8 mm	0	4	4 (1.8)
<8 mm	6	14	18 (8.1)
Angiodysplasia	0	2	2 (0.9)
Diverticulosis	2	19	19 (8.5)
Hemorrhoids	0	135	135 (60.5)
Fissure/Rectal ulcer	0	14	14 (6.3)
Normal colonoscopy	0	0	48 (21.5)

Of the 223 patients, 48 (21.5%) had a normal outcome. Abnormalities were found in 175 patients (78.5%). Hemorrhoids were the most common finding, present in 135 patients (60.5%). In 98 patients (73%), hemorrhoids were the only finding, excluding non-adenomatous polyps. In the other patients with hemorrhoids, coincident adenomas, colitis, and diverticulosis were also diagnosed. Other anorectal diseases, including rectal ulcers or anal fissures, were found in 14 patients (6.3%).

Twenty-six patients (11.6%) had colon neoplasms, either adenomas or adenocarcinomas. Four patients (1.8%) had adenomatous polyps ≥8 mm in the distal colon. Eighteen patients (8.1%) had adenomas <8 mm; 6 (2.7%) had polyps only in the proximal colon. Hyperplastic polyps were not included in this analysis. Four patients (1.8%) had adenocarcinomas. These cancers were located in the rectum or sigmoid colon. The ages of these patients ranged from 32 to 48 years. One cancer patient had a distant cousin who died of colon cancer at the age of 47; no others had a family history of colon cancer.

Biopsy-proven chronic colitis was found in 13 patients (5.8%). Among the 7 patients who had colitis in the proximal colon, colitis was present in the distal colon as well. Angiodysplasia was found in 2 of the patients (0.9%) and only affected the distal colon. Diverticulosis was found in 19 patients (8.5%).

■ DISCUSSION

Rectal bleeding is a common problem in the US population. In a questionnaire sent by mail, 235 of 1643 respondents (15.5%) aged 20–64 years reported rectal bleeding.²⁴ The prevalence was higher in younger persons: 18.9% for those aged 20–40 years vs 11.3% for those older than 40 years ($P<.001$). Only 13.9% of all patients with rectal bleeding in this study had visited a physician for bowel problems in the past year.

A major challenge for the clinician is deciding if a diagnostic endoscopy is necessary and, if so, whether flexible sigmoidoscopy or colonoscopy should be done. Certainly, the concern of missing a potentially early and curable colon neoplasm substantiates the argument favoring colonoscopy.

Only 13.9% of patients with rectal bleeding had visited a physician for bowel problems in the past year

However, the costs, risks, and inconvenience of doing colonoscopy on every patient with rectal bleeding may overshadow the benefit.

Normal/benign findings

Either normal findings or benign diseases are commonly documented in younger patients with rectal bleeding. Approximately 21% of patients in this study had normal findings on colonoscopy. Hemorrhoids are believed to be the most common cause of rectal bleeding in all age groups, accounting for 27%–72% of cases.^{8,19}

In a random community sample of 202 people older than 30, with no history of cancer or inflammatory bowel disease, 16% reported rectal bleeding in the preceding 6 months.²⁵ About 43% of the respondents believed they had “hemorrhoids,” based on the presence of anal pain, bleeding, protrusion, or perianal itching. In our study, about 60% of patients had documented hemorrhoids and 6.3% had other anorectal pathology, including anal fissures and rectal ulcers.

Colitis

Colitis was found in nearly 6% of our patients, which is similar to the incidence reported in series on older patients.^{13,14,26} Another study found that 6 of 102 patients under the age of 50 with rectal bleeding had colitis.²⁸ All the patients with colitis in our series were found to have involvement of the distal colon.

Colorectal cancer

Several studies have evaluated the prevalence of colorectal cancer among patients with rectal bleeding. An overall incidence of 4%–19% is reported in some series that included patients older than 50 years.^{8,26}

In a study of 280 patients younger than 40 by Acosta et al,¹¹ the incidence of colon cancer was

0.03%. Lewis et al retrospectively evaluated 570 patients younger than 50 years with rectal bleeding and found only 1 patient with colorectal cancer.²⁷ An additional 6.7% of patients had colorectal adenomas.

A limitation of this study, however, was that only 40% of patients had a colonoscopy; the other 60% had a flexible sigmoidoscopy. We found a colorectal cancer incidence of 1.8% among patients under 50 years old and all of these cancers were found in the distal colon.

Adenomas

Adenomas were found in 9.9% of our patients. A similar incidence was found in a series that studied the utility of anoscopy in addition to lower endoscopy.²⁸ Only 1.8% of our patients had adenomas ≥ 8 mm, and all of these polyps were located in the distal colon. The incidence of adenomas < 8 mm was 8.1%, and a third of the patients had polyps in the proximal colon. The relationship of these small adenomas to rectal bleeding is unclear as some of these patients also had hemorrhoids or diverticulosis. Polyps are common, bleed infrequently, and seem to be identified by chance during the investigation of GI bleeding.^{29–30}

Choosing diagnostic tests for younger patients

Choosing between flexible sigmoidoscopy and colonoscopy for younger patients with rectal bleeding is a clinical dilemma. Most of the literature regarding the evaluation of rectal bleeding has either been directed towards older adults or has failed to stratify patients by age.^{4–8,13–22}

One large study retrospectively studied the colonoscopic findings for rectal bleeding in 280 adults younger than 40 years.¹¹ They found significant lesions, including cancers, polyps, colitis, angiodysplasia, diverticula, and rectal ulcers in 21% and concluded that full colonoscopy should be seriously considered even in this younger population. The study did not mention the location of the significant lesions within the colon, so the basis for recommending colonoscopy is unclear.

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Also, the study included a substantial number of hyperplastic polyps listed as significant pathology. To date, hyperplastic polyps do not appear to have malignant potential.

A prospective Canadian study found that, among 61 patients younger than 55 undergoing colonoscopy for rectal bleeding, most lesions, including colitis, polyps, cancers, diverticula, and hemorrhoids, were located within 60 cm of the anus.³¹ However, 1 cancer in a patient with massive bleeding and 1 small polyp were beyond 60 cm. A recent cost-effectiveness analysis by Lewis et al for the diagnosis of rectal bleeding in young persons demonstrated an incremental cost-effectiveness of colonoscopy as the age of the patient increased from 25 years to 45 years.³² At 35 years, the cost-effectiveness of evaluating the whole colon approximated the cost-effectiveness of repeat screening for colorectal cancer. At age 25 years, however, the cost-effectiveness of colonoscopy was more than \$270,000 per year of life gained.

By comparison, several large studies have looked at colonoscopic findings in the screening population. Screening colonoscopy detected no colorectal cancers in 906 asymptomatic persons aged 40 to 49 years.³³ Adenomatous polyps occurred in 8.7% of patients and advanced polyps (adenomas ≥ 10 mm, villous adenomas, adenomas with high-grade dysplasia) occurred in 3.5% patients; 55% of the lesions were located distally. In a Veterans Affairs study, advanced proximal neoplasias or invasive cancer were found in about 10% of patients older than 50 years undergoing screening colonoscopy.³⁴ Of those with advanced proximal adenomas, only 48% had distal adenomas, supporting a role for colonoscopy over flexible sigmoidoscopy in the screening population.

Although none of the advanced adenomas or colon cancers were localized to the proximal colon, our study was not designed to determine the superiority of flexible sigmoidoscopy or colonoscopy. One important point is that flexible sigmoidoscopy at our institutions involves a full colon preparation and, in over 90% of cases, examines the distal 60 cm of colorectum (typically at or near the

27% of patients with hemorrhoids had coincident colorectal pathology, including adenomas and colitis

splenic flexure). Other studies reporting on flexible sigmoidoscopy use only enema preps and evaluate the distal colon less extensively.

The difficulty with more limited colon exams, such as anoscopy, rigid sigmoidoscopy, or flexible sigmoidoscopy, is whether or not a full colonoscopic exam should be performed when only benign anorectal pathology, namely hemorrhoids and anal fissures, are found. Hemorrhoids and anal fissures are the major cause of rectal bleeding and, because they are common, they can be coincident with more significant colon diseases, such as tumors and colitis. In our study, hemorrhoids were the only colonoscopy finding in 73% of the patients with hemorrhoids. The other 27% with hemorrhoids had coincident colorectal pathology, including adenomas and colitis, arguing that the discovery of hemorrhoids on a limited exam of the anorectum should not discourage practitioners from pursuing more detailed exams, such as colonoscopy. We can speculate that anoscopy alone would have missed a significant number of patients with cancers, adenomas, and chronic colitis.

Results and limitations of this study

The results of our study are significant in that approximately 12% of patients younger than 50 years with rectal bleeding had colon neoplasms, including 4 with colon cancers. Furthermore, an additional 13 patients had chronic colitis, another important finding with significant clinical implications for therapy and colorectal cancer surveillance.

Although a significant proportion of patients in this study was evaluated at a tertiary referral center, we believe that referral bias did not strongly influence the results of this study. Most endoscopic referrals originate from primary care providers within the University of Utah's health care system. Furthermore, VA patients comprised approximate-

ly one fourth of the subjects, and VA patients typically receive all of their care within the VA Medical Center.

Because of the small numbers of patients in this study, it is difficult to conclude whether colonoscopy or flexible sigmoidoscopy is warranted in this patient population. However, based on current available evidence, we would strongly recommend consideration of colonoscopy in this patient population. Certainly, a large, prospective trial would be needed to answer the question of whether colonoscopy or flexible sigmoidoscopy is the appropriate test for patients younger than 50 years who present with rectal bleeding.

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