Spectrum of Lower Gastrointestinal Hemorrhage: An Endoscopic Study of 166 Patients

MAHESH KUMAR GOENKA, RAKESH KOCCHHAR, SATISH KUMAR MEHTA
Department of Gastroenterology, Postgraduate Institute of Medical Education and Research, Chandigarh 160 012

Abstract

Background: The spectrum of lesions causing lower gastrointestinal hemorrhage shows marked geographic variation. The study was aimed to determine this spectrum in our region using endoscopic examination.

Methods: 166 patients presenting with lower gastrointestinal hemorrhage were investigated using colonoscopy as the first investigation.

Results: Lesions responsible for bleeding could be identified in 141 patients (84.9%). In 25 patients (15.1%), the etiology of bleed could not be determined either because of failure to identify a lesion (10 patients) or because of an incomplete examination (15 patients). Major causes of lower gastrointestinal bleeding included idiopathic ulcerative colitis (19.3%), acute colitis (12.0%), colonic polyps (10.2%), radiation colitis (9.0%), solitary rectal ulcer (7.8%), colonic carcinoma (7.2%), colonic tuberculosis (4.2%) and enteric fever (3.0%).

Conclusion: Endoscopic examination is very useful in evaluating patients with lower gastrointestinal hemorrhage. The predominant causes of lower gastrointestinal bleeding in our experience are different from those reported from western countries. (Indian J Gastroenterol 1993; 12: 129-31).

Key words: Rectal bleeding, colonoscopy, colitis, ulcerative colitis, colonic tuberculosis, colonic varices.

Introduction

The management of patients with lower gastrointestinal (L-GI) hemorrhage continues to be a diagnostic and therapeutic challenge. The advent of fiberoptic colonoscopy has revolutionized the approach to lower GI bleed. Colonoscopy has been used successfully both as a primary investigation and as a secondary investigation after inconclusive barium enema and rigid proctosigmoidoscopy. Most of the earlier reports on colonoscopic experience in lower GI hemorrhage originated from the West. It is only recently that reports from Asian countries have been published, including one from one center in India. It appears that the spectrum of disease causing lower GI bleed in India and other Asian countries is different from that reported from the West. In this report, we present the results of colonoscopy in patients with lower GI bleed seen by us over a five-year period.

Methods

One hundred and sixty six patients (13-20 years – 30; 21-40 years – 71; >40 years – 65) referred to a gastroenterology unit of our hospital with lower GI hemorrhage between January 1987 and December 1991 were included in this study. Patients detected to have hemorrhoids, age or anal fissures as the cause of hemorrhage were excluded. After an informed consent, fiberoptic colonoscopy was performed, using CF-110, TCF or CF-LB3 endoscope (Olympus Corporation, Japan), either during the hemorrhage (65 patients) or within 48 h of cessation of bleeding (101 patients). Patients with ongoing bleeding were studied without any bowel preparation, while those in whom bleeding had stopped received oral mannitol (350 mL, 20%) about 8 h prior to colonoscopic examination. All patients received pentazocin (30 mg) or diazepam (5-10 mg) intravenously just before examination.

Active colitis was diagnosed at colonoscopy by the presence of edema, hyperemia, friability, ulceration and loss of normal vascular pattern. Acute self-limited colitis was differentiated from idiopathic inflammatory bowel disease (IBD) by histological criteria, while the etiology of acute colitis was established by fresh stool examination and rectal swab and by stool culture in McConkey and xylose-lactose deoxycholate media. Radiation colitis was diagnosed based on history of irradiation with endoscopic evidence of colitis along with telangiectasias and/or ulceration. Colonic tuberculosis was confirmed by demonstration of granuloma(s) and/or acid-fast bacilli at histological or cytological examination, along with response to antituberculous drugs. The diagnosis of malignancy was confirmed by biopsy, while polypi were removed on a subsequent colonoscopic examination by snare diathermy. Enteric fever was diagnosed in a febrile patient with positive Widal test or blood culture for Salmonella typhi or S paratyphi and demonstration of bleeding from ileal ulcers or an ooze from across the ileocecal opening in the absence of any colonic mucosal pathology. Diverticulosis was accepted as a cause of
hemorrhage only in the absence of any other obvious cause. Standard criteria were used for the diagnosis of other colonic lesions like solitary rectal ulcer,10 vascular malformation,11 and Crohn's disease.12

Results
Of the 166 patients included in the study (96 men, 70 women; age range 13-84 years), diagnosis was possible in 141 patients. In 25 patients (15.1%), colonoscopy was inconclusive either because of incomplete examination due to technical reason (15 patients) or because of failure to identify any mucosal lesion despite a complete colonscopic examination (10 patients). The Table gives the observed causes of lower GI bleed as well as their distribution in different age groups. The 'miscellaneous' group included indeterminate chronic colitis in 5 patients, Crohn's disease in 4, colonic diverticulosis and vascular malformations in three each, colonic varices in two and ischemic colitis, benign stricture and intussusception in one patient each.

Idiopathic ulcerative colitis (IUC) was the commonest cause. Of the 32 patients with IUC, 6 had pancolitis; 17 had limited-extent colitis and 9 had proctosigmoiditis. In 17 patients with colonic polypli, the number and size of polypli ranged from 1 to 8 and 0.5 to 1.5 cm respectively. These polypli were located in the rectum in 12 patients, in the sigmoid colon in 8, in the descending colon in four, in the transverse colon in two and in the ascending colon in one patient. Radiation colitis was limited to the rectum and sigmoid colon in all the 15 patients; it followed radiotherapy for carcinoma of the uterine cervix in 14 patients and for non-Hodgkin's lymphoma in one. The total dose of radiation ranged from 6000 to 8000 cGy. Of the 20 patients with acute colitis, Entamoeba histolytica trophozoites were demonstrated in three patients while no etiological agent could be isolated in the remaining 17 patients including those who had received renal allograft transplant and were on immunosuppressive therapy.

Colonoscopic findings in tuberculosis consisted of mucosal nodularity or polypi in 6 patients, ulceration in 4, strictures in 3 and diffuse colitis in 1 patient. Rectum (6) was the commonest site of colorectal carcinoma followed by sigmoid colon (2), descending colon (2), hepatic flexure (1) and ascending colon (1). Five patients had IBD which could not be classified as IUC or Crohn's disease and was labeled as indeterminate chronic colitis. Patients with Crohn's colitis had rectal sparing (2), aphthous ulcers (4), cobbled-stonimg (3) and/or skip lesions (4). In one of the four patients with Crohn's colitis involvement was limited to right colon while in the other three, both right and left colon were involved. Lower GI varices were seen in 2 patients. One of them with extrahepatic portal venous obstruction had varices upto splenic flexure, while in another patient, a cirrhotic, these were restricted to the rectum and sigmoid colon.

Discussion
The etiology of lower GI bleeding shows marked geographic variation. Colonic polypli, carcinoma and IBD constituted the three most important causes in various series from West.17 The experience from Asia is some-

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>13-20 (n=30)</th>
<th>21-40 (n=71)</th>
<th>&gt;40 (n=65)</th>
<th>Total (n=166)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Idiopathic ulcerative colitis</td>
<td>3 (10)</td>
<td>20 (28)</td>
<td>9 (14)</td>
<td>32 (19)</td>
</tr>
<tr>
<td>Acute colitis</td>
<td>4 (13)</td>
<td>10 (14)</td>
<td>6 (9)</td>
<td>20 (12)</td>
</tr>
<tr>
<td>Colonic polyps</td>
<td>5 (17)</td>
<td>7 (10)</td>
<td>5 (8)</td>
<td>17 (10)</td>
</tr>
<tr>
<td>Radiation colitis</td>
<td>0</td>
<td>3 (4)</td>
<td>12 (18)</td>
<td>15 (9)</td>
</tr>
<tr>
<td>Solitary ulcer of rectum</td>
<td>6 (20)</td>
<td>4 (6)</td>
<td>3 (5)</td>
<td>13 (8)</td>
</tr>
<tr>
<td>Colonic carcinoma</td>
<td>0</td>
<td>4 (6)</td>
<td>8 (12)</td>
<td>12 (7)</td>
</tr>
<tr>
<td>Tuberculosis</td>
<td>2 (7)</td>
<td>3 (4)</td>
<td>2 (3)</td>
<td>7 (4)</td>
</tr>
<tr>
<td>Enteric fever</td>
<td>2 (7)</td>
<td>3 (4)</td>
<td>0</td>
<td>5 (3)</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>4 (13)</td>
<td>7 (10)</td>
<td>9 (14)</td>
<td>20 (12)</td>
</tr>
<tr>
<td>Inconclusive colonoscopy</td>
<td>4 (13)</td>
<td>10 (14)</td>
<td>11 (17)</td>
<td>25 (15)</td>
</tr>
</tbody>
</table>

Figures in parentheses are percentages
what different	extsuperscript{1,3} with antibiotic associated colitis and ischemic colitis constituting the most frequent causes in Japan,	extsuperscript{2} and colonic malignancy, colitis and vascular malformation the most common causes in a report from Taiwan.	extsuperscript{3} From India, Bhargava et al	extsuperscript{6} found non-specific colitis and ulcers involving the left colon to be the commonest cause, followed by polyp and carcinoma. Our experience is however different, with IBD, acute colitis and colonic polyp accounting for more than 40% of cases.

There is limited information available on the etiology of lower GI bleed in different age groups among the adult population. We have found a different spectrum of causes among the three age groups. Our results are at variance with the experience from the West where diverticulosis and vascular ectasia are the common causes in the elderly	extsuperscript{15} and from that from Korea where malignant neoplasms were the commonest cause in all the age groups.

While acute colitis was an important cause of lower GI bleed in the present series, in 17 of 20 such patients we could not isolate an infectious agent. Failure to isolate an organism in a majority of these cases could be due to prior use of antibiotics or because of colitis due to fastidious organisms like Yersinia enterocolitica or Campylobacter jejuni. Colitis in three patients with history of renal allografts could have been contributed by vascular damage during the transplant surgery.

Tuberculosis and enteric fever were the two other infective causes of lower GI bleed encountered in the present series. Bleeding is an uncommon manifestation of intestinal tuberculosis. However, because of the high prevalence of tuberculosis in India, it should be considered as an important possibility in patients presenting with lower GI bleed. Enteric fever was responsible for bleeding in only 5 patients in the present series in contrast to the experience of our surgical colleagues.

The relatively infrequent occurrence of colonic polyp, colonic carcinoma and diverticulosis in Indians as compared to the population in developed countries is well recognized and has been attributed to traditional Indian diet with its high fiber content.	extsuperscript{17} We have earlier reported the emergence of colonic diverticulosis in urbanized Indians possibly as a result of changing Indian lifestyle.	extsuperscript{19} Colonic angiodyplasia, in contrast to Western experience, was rare in the present series, being seen in only 3 patients with lower GI bleed. This is however not surprising in view of the findings by Jassudason et al	extsuperscript{18} who noticed that angiodyplasia in India is more commonly localized to the small intestine rather than colon. The striking preponderance of radiation colitis in the present series is related to a high prevalence of carcinoma cervix, use of high-dose radiotherapy in these patients and the referral pattern of our hospital.

The success of colonoscopic examination in achieving a diagnosis in patients with lower GI bleeding has ranged from 23% to 96% in various reported series.	extsuperscript{13} Higher success has been reported in studies utilizing endoscopy as a primary investigation and with a more aggressive approach. Our study with a success rate of 85% confirms the usefulness of early endoscopy while evaluating the cause of lower GI hemorrhage.

References