

## Colonoscopy for investigation of unexplained rectal bleeding in a tropical country

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**Summary:** One hundred and forty four patients underwent colonoscopy to detect the cause of rectal bleeding. This was successful in either identifying the lesion or excluding the presume of lesions up to the cecum in 88.88% patients. The source of bleeding was diagnosed in 106 (73.61%) patients. Predominant lesions were nonspecific colitis and ulcers (62.26%), polyps (17.92%), cancer (8.49%), rectal varices (3.77%) and tuberculosis (1.88%). The remainder had other colonic conditions such as radiation colitis, ischemic colitis, vascular malformation, diverti-culosis, right sided ulcerative colitis and pseudopancreatic cyst communicating with the descending colon. The majority (94.33%) of these lesions involved the lleft colon. Thus colonoscopic examination was useful in localizing the cause of rectal bleeding and the predominant lesions were differed from those reported in the western hemisphere. *Gastroenterol Jpn* 1990;25:781-785

**Key words:** colonoscopy; nonspecific colitis; nonspecific ulcers; rectal bleeding; rectal varices

### Introduction

Rectal bleeding is a common sign of colonic disease and always demands investigation. Fiberoptic colonoscopy in Western countries has proved valuable in the diagnosis of unexplained rectal bleeding<sup>1-6</sup> and revolutionized the management of colonic polyps<sup>7</sup> but is yet to be evaluated in a tropical country.

We report our experience at the All India Institute of Medical Sciences, New Delhi with colonoscopic examination for the investigation of unexplained rectal bleeding.

### Patients and Methods

Between 1978-88, 144 consecutive patients with unexplained recurrent lower gastrointestinal bleeding underwent colonoscopic examination. The amount of blood lost each time varied between 5 to 100 ml (being 5-20 ml in the majority of

patients). patients with massive bleeding were excluded. The mean age was 34.26 years (range 17-79 years). There were 114 male and 30 female patients. Local anorectal conditions such as hemorrhoids or fissures were excluded by digital and proctosigmoido-scopic examination. Even when a lesion was found in the rectosigmoid region by a rigid sigmoidoscope, colonoscopy was performed to obtain additional information. Single contrast barium studies, performed in every subject, were normal in all except 10 patients.

The Olympus CF-LB<sub>2</sub> colonoscope was used in 124 examinations and the CF-MB<sub>3</sub> in 20 examinations. The patients were prepared and examined by the technique described earlier<sup>8</sup>. No patient was actively bleeding at the time of the examination. Under intravenous diazepam sedation polypectomy was performed via the colonoscope by the snare cautery technique with no mortality or morbidity.

**Table 1** Causes of rectal bleeding in 106 cases

|                                     |    |
|-------------------------------------|----|
| 1. Nonspecific colitis & ulcers     | 66 |
| 2. Polyps                           | 19 |
| 3. Carcinoma                        | 9  |
| 4. Rectal varices                   | 4  |
| 5. Tuberculosis                     | 2  |
| 6. Radiation colitis                | 1  |
| 7. Ischemic colitis                 | 1  |
| 8. Ruptured pseudopancreatic cyst   | 1  |
| 9. Vascular malformation            | 1  |
| 10. Diverticulosis                  | 1  |
| 11. Ulcerative colitis (right side) | 1  |
| 106 patients                        |    |

## Results

Out of the 144 patients included in the series 115 (80%) underwent total colonoscopy. visualization of the transverse colon was possible in 130 patients (90%). The instrument could be advanced into the descending colon in 135 patients (94%). We failed to complete the procedure in the rest of the patients due to lesions impeding further passage of the instrument (7 patients); a redundant sigmoid (12 patients) or transverse colon (6 patients) and inadequate length of instrument CF-MB<sub>3</sub> (4 patients). There was no complication related to the procedure.

Of the 144 patients studied the procedure was successful either in identifying the lesion or in excluding it up to the level of the cecum in 128 (88.88%). In 106(73.61%) patients there were significant findings (**Table 1**). The locations of lesions can be seen in **Table 2**.

### A. Nonspecific colitis and ulcers

#### (1) Nonspecific colitis

In 31 patients the mucosa of the colon revealed hypervascularity, erythematous patches, edema and increased friability. Three patients had these changes from rectum to the cecum, 7 up to transverse colon, and in 9 up to the splenic flexure. In the remaining 12 patients the changes were limited to the rectum and sigmoid colon.

Biopsy included substantial amounts of mucosa in the majority of cases. There was mild to moderate degree edema of the lamina propria.

**Table 2** Causes of rectal bleeding in 106 cases

|  |    |
|--|----|
| 1. Rectum*                                     | 24 |
| 2. Sigmoid colon*                              | 40 |
| 3. Descending colon*                           | 5  |
| 4. Transverse colon                            | 1  |
| 5. Right colon                                 | 5  |
| 6. Diffuse involvement* (Non specific colitis) | 31 |
| 106 patients                                   |    |

Involvement of left colon in 100 (94.33%) patients.

This also showed inflammatory cell infiltration by an admixture of cells, dominant amongst which were plasma cells and eosinophils. The other types present were lymphocytes, histiocytes and a few polymorphonuclear leucocytes. In a few cases, dense aggregates of lymphocytes were seen in the mucosa and submucosa with formation of lymphoid follicles in some cases. The glands were well aligned in most cases. However, in a few cases there was a minimal disorientation of glands which also showed variation in size. Goblet cell proportions were generally normal whereas in an occasional case focal depletion was noticeable. The muscularis propria in a few cases also showed infiltration by inflammatory cells. In an occasional case, moderate to marked cryptitis with intense infiltration by polymorphonuclear leukocytes was seen. Ulceration of mucosa with or without inflammatory granulation tissue was rarely present.

#### (2) Nonspecific ulcers

Twenty six patients revealed nonspecific ulcers; eight of them in the rectum, 6 in the distal sigmoid, 8 in the proximal sigmoid, 3 in the distal descending colon and one in the cecum. Most of these measured 1 to 2 cm and they were either round, stellate or irregular in shape. The margins were swollen and erythematous. The base of the ulcers was covered with a whitish exudate. In 20 patients the ulcers were single and 6 had two ulcers distributed in the rectosigmoid region with normal intervening mucosa.

Biopsies obtained from the lesions revealed fragments of inflammatory granulation tissue, indicating active ulceration. These included chronic inflammatory changes including fibrinopurulent

exudate covering the mucosa and the presence of inflammatory infiltrates in the submucosa. In some cases ulceration of mucosa with inflammatory granulation tissue was also seen. The latter observation reflects our practice of taking a biopsy specimen from the edge of the lesion where, in fact, typical changes are most likely to be found. Occasionally uneven spacing of the crypts, marked irregularity of their size and axial distribution and scarring of the lamina propria suggested healing ulceration. In an occasional case moderate to marked cryptitis with intense infiltration by polymorphonuclear leucocytes was present.

### (3) Nonspecific colitis and ulcers

Nine patients had changes of nonspecific colitis and ulcers in the rectosigmoid region. Four of them had ulcers in the distal sigmoid, 4 in the proximal sigmoid colon and one in the rectum.

Among the biopsies of non-specific colitis or ulcers there was no evidence of granuloma, amoeba, crypt abscess malignancy or ischemia.

### B. Polyps

Polyps were responsible for bleeding in 19 patients and all were removed with the diathermy snare. The histological examination revealed adenomas in 11, hyperplastic and juvenile polyps in 5 and 3 patients respectively. They were single, pedunculated and the size varied between 1 to 2 cm. None of the adenomatous polyps showed invasive carcinoma. Seven of them were located in the rectum, 10 in the sigmoid, one in the descending and the remaining one in the ascending colon. In 2 patients in which polyps were detectable on barium contrast studies, the polyps were 1.5 to 2 cm in diameter.

### C. Carcinoma

Nine patients had carcinoma. Of these 4 lesions were present in rectosigmoid and 5 in the sigmoid colon. Seven of them also showed irregularity of mucosa and filling defects on barium studies.

### D. Tuberculosis

In one patient the colonoscopic examination

revealed a linear ulcer about 3.5 to 4 cm in size on the lateral wall of the cecum. The other case had a similar type of ulcer surrounded by mucosal nodules in the distal transverse colon. Barium contrast study showed a stenotic lumen at the same location. Biopsy revealed granulomas compatible with tuberculosis in both patients.

### E. Rectal varices

Four patients had intermittent bleeding from rectal varices. All of them had hepatic cirrhosis and underwent endoscopic injection sclerotherapy treatment.

### F. Miscellaneous

Amongst the remaining six patients, three had lesions in the sigmoid, one in the descending and two in the right colon. The lesions in the sigmoid colon were ischemic colitis, radiation colitis and diverticulosis. In one patient, a pseudopancreatic cyst was in communication with the descending colon. Ulcerative colitis involved only the right colon in one while another patient had a vascular malformation in the cecum.

## Discussion

In the present study, colonoscopy was successful in identifying the location and type of colonic disease in 106 of 144 (73.8%) patients. Similar results have been noted by others<sup>1-6</sup> with significant endoscopic findings ranging from 23 to 60% of the patients. The majority of our lesions (94.33%) were on the left-side of the colon. In contrast, the investigators from the West<sup>2,3,5,6,9</sup> reported right sided lesions in about 30% of cases.

Predominant lesions encountered were non-specific colitis and ulcers (62.26%) and polyps (17.92%). Other important lesions were carcinoma (8.49%), rectal varices (3.77%) and tuberculosis (1.88%). This is in contrast to the reports of workers in the western hemisphere where the majority of lesions were polyps, carcinoma and unrecognised inflammatory bowel diseases<sup>10</sup>.

Non-specific colitis has been found in all ages from 17 through 70 years. The clinicopathological features of this entity is unlike ulcerative colitis.

The rectum and sigmoid colon were the most common sites. This was followed by involvement of the descending, transverse, and right colon along with rectum and sigmoid colon. Colonoscopic appearances included the presence of hypervascularity, erythematous patches, edema and increased friability. Microscopic examination generally showed inflammatory cell infiltration with predominantly plasma cells and eosinophils along with edema of lamina propria. Goblet cells were almost normal and only an occasional case showed cryptitis. A similar type of colitis has been reported by Mohamed et al in Saudi Arabia<sup>11</sup>.

The nature of nonspecific ulcers in the present study were quite similar to those reported in the past<sup>12-16</sup> except that in our series they were commonly present in the sigmoid colon followed by the rectum, descending colon and cecum. In contrast, in the Western literature, they are predominantly seen in the ascending colon followed by the sigmoid colon. The histologic findings in our study were similar to those reported by Butsch<sup>13</sup> and Mahoney et al<sup>15</sup>. Barium enema studies were not helpful for diagnosis. Other causes of ulcers in the colon, such as tuberculosis, amoebiasis, Crohn's disease, malignancy and ischemia were excluded before labelling these ulcers as nonspecific.

The etiology of these ulcers is not known. Drugs, viral infections, trauma, genetic influence, intussusception, lipoma, solitary diverticulitis, vascular thrombosis and mucosal ischemia, emotional factors and high residual diet have been implicated as possible etiological factors. Solitary rectal ulcers are also nonspecific but the clinical, histological and etiologic differences makes it a separate entity<sup>17</sup>. In the present study, 9 patients had nonspecific ulcers associated with colitis. This suggests that both of these lesions may represent spectrum of a common disease and a common etiological factor is responsible for their production.

Rectal varices are an uncommon cause of bleeding in patients with portal hypertension due to liver cirrhosis<sup>18</sup>. The interesting feature in these patients was that they bled following eradication of esophageal varices by endoscopic injection sclerotherapy. Bleeding in ileocecal tuberculosis is an uncommon phenomenon though occasion-

ally it may lead to hematochezia<sup>19</sup>. Rarely ulcerative colitis may spare the rectosigmoid region<sup>20</sup>, as was also evident in one of our cases reported here.

In this study, single contrast barium enema failed to reveal the lesion in all except 10 patients. It has been reported earlier that barium enema may not demonstrate the changes of colitis<sup>5,21</sup>. Other lesions less than 1 cm in size, sessile or flat may not be detected<sup>22,23</sup>. Malignancy can be missed in the sigmoid colon if it is tortuous or masked by overlying loops of barium-filled ileum. However, we feel that double contrast radiology would have detected more lesions. Thus, colonoscopy has proved to be a useful procedure for the diagnosis of unexplained rectal bleeding in a tropical country.

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