

Original Research Article


# The diagnostic efficiency of sigmoidoscopy in patients with bleeding per rectum

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## Abstract

**Background:** Rectal bleeding is the most common symptom of large bowel pathology which comprises 14 to 19% in adult population. Sigmoidoscopy is a feasible and safe method for diagnosing colorectal problems than colonoscopy and proctoscope.

**Aim:** The present study was an attempt to evaluate the patients with bleeding per rectum sigmoidoscopically and to select the best possible approach to treat the underlying pathology.

**Materials and methods:** A total 54 patients with bleeding per rectum were considered from outpatient department from April 2013 to April 2015 and all the subjects were undergone for routine blood, urine and stool investigations, and sigmoidoscopic investigation.

**Results:** A total of 26 cases were examined sigmoidoscopically for rectal bleeding in that 73.08% cases were able to confirm as definitive source of bleeding and 26.92% cases have other lesions which could not be detected by sigmoidoscope.

**Conclusion:** Sigmoidoscopy has a very high diagnostic yield and would be recommended in the workup of patients presenting with bleeding per rectum. Haemorrhoids followed by ulcerative colitis were the leading cause of bleeding per rectum in this study.

## Key words

Sigmoidoscopy, Rectum, Bleeding per rectum.

## Introduction

Since 1970s, sigmoidoscopy has been widely used for the investigation of patients with lower

gastrointestinal tract complications. Bowel preparation with a single phospho-soda enema prior to the examination is usually effective for providing a clear view of the rectum and distal

colon [1]. Patient acceptance of this procedure is high [2].

Rectal bleeding is a common clinical problem. Approximately one in seven persons aged from 20 to 64 years has a history of rectal bleeding [3]. Among local colorectal surgical units, there is currently no consensus as to how patients should be further investigated if an obvious anal cause for the bleeding is identified. Some investigators have suggested that colonoscopy should be performed for all individuals presenting with rectal bleeding because of the potentially high diagnostic yield of abnormal findings, including neoplastic disease [4-6]. Colonoscopy, however, causes inconvenience to patients due to the need for thorough bowel preparation. The procedure may also cause intense abdominal pain and necessitate use of sedatives, and may be complicated by bowel perforation and bleeding. Routine colonoscopy for investigation of rectal bleeding is also not desirable in the presence of limited health resources. The use of sigmoidoscopy may offer a more cost effective diagnostic approach, particularly for patients presenting with only bright red rectal bleeding.

Sigmoidoscopy is a safe method for diagnosing and even taking biopsies whenever necessary in colorectal problems with bleeding with little trouble to the patient under direct vision. Therefore, the present study is an attempt to evaluate the patients with bleeding per rectum sigmoidoscopically and to select the best possible approach to treat the underlying pathology.

### **Materials and methods**

The present study was conducted in Department of General Surgery, MNR Medical College and Hospital, Sangareddy. The patients who attended the surgical or medical OPD, and who were admitted in the wards, and who had the common chief complaint of passage of blood per rectum besides the symptoms were included. This study was conducted during April, 2013 to April, 2015.

All the cases clinical history was subjected and complete clinical examination was done with special emphasis on the examination of abdomen. Patients were also referred to complete clinical investigations (Total leukocyte count, differential leukocyte count, hemoglobin), urine examination and stool examination was also done for the search of ova and cysts and also for some abnormal cells. A rectal or colonic biopsy was also taken based on availability.

Barium enema was done after sigmoidoscopy in few cases having symptoms suggestive of surgical disease and in patients who showed evidence of cancer of polyp on sigmoidoscopy. In those cases where diagnosis was not ascertained on sigmoidoscopy, they were also subjected to barium enema examinations.

Sigmoidoscopy was performed without bowel preparation with laxative or by washouts. In few cases bowel preparation was done before the sigmoidoscopy. Indeed it is very desirable that the inspection should be carried out without any preparation. Purgation may make the examination impossible by filling the rectum with liquid faeces. Rigid sigmoidoscope having diameter of 1.5 cm. and length of 25 cm was used. With this small bore instrument discomfort to the patient was minimal and examination to 25 cm was possible without difficulty in most of the cases.

### **Results**

The present study was conducted in Department of General Surgery at MNR Medical College and Hospital, Sangareddy, during the period of April 2013 to April 2015. The study group consisted of 54 symptomatic patients with complaints of bleeding per rectum in whom cause could not be ascertained by routine methods like proctoscopy.

A total 18000 patients were visited the out patients department during a period from April 2013 to April 2015. Among all, 1988 (12.13%) patients had the problem of bleeding per rectum. Among 1988 cases 54 cases with complaint of

passage of blood per rectum, the cause could not be ascertained by clinical examination, inspection and proctoscopy. Out of a total of 54 cases, who were advised sigmoidoscopy to determine the cause of unknown rectal bleeding, 31 (57.40%) cases were males and remaining 23

(42.59%) were females. (Table - 1) The patient compliance was as low as 26 cases (49.05%) out of 54 cases that were advised sigmoidoscopy turned up for the examination to determine the cause of bleeding.

**Table – 1:** Sex and age distribution of different subgroups of patients with unknown bleeding per rectum.

Age group (years)	Males		Females		Total	
	No.	%	No.	%	No.	%
0 – 10	2	6.46%	1	4.34%	3	5.56%
11 – 20	5	16.12%	2	8.69%	7	12.98%
21 – 30	5	16.12%	4	17.39%	9	16.66%
31 – 40	7	22.60%	5	21.75%	12	22.22%
41 – 50	4	12.90%	5	21.75%	9	16.66%
51 – 60	8	25.80%	6	26.08%	14	25.92%
61 – 70	-	-	-	-	-	-
<b>Total</b>	31	100.00%	23	100.00%	54	100.00%

A total of 26 cases were examined sigmoidoscopically for rectal bleeding whose cause had not been determined. The probable or definite source of the bleeding was diagnosed in 19 (73.07%) cases. The remainder 7 (26.92%) cases had various other lesions which could not be detected by sigmoidoscope.

Sex distribution of different lower gastrointestinal lesions presenting with bleeding per rectum was as per Table - 2. The maximum number of cases of ulcerative colitis belonged to age group 11-20 (37.71%), followed by 28.57% cases from age group of 31-40 years. 21.42% cases were from age group 21-30 years while 14.28% cases belonged to age group 41-50 years.

**Table – 2:** Sex distribution of different lower gastrointestinal lesions presenting with bleeding per rectum.

Lower GI lesions	Total	Males		Females	
		No.	%	No.	%
Ulcerative colitis	7	4	26.68%	3	27.27%
Amoebic colitis	3	2	13.33%	1	9.10%
Colonic malignancy	8	5	33.33%	3	27.27%
Polyps	2	2	13.33%	-	-
Post irradiation colitis	-	-	-	-	-
Sigmoid Diverticulae	-	-	-	-	-
Bacillary dysentery	-	-	-	-	-
Unknown cause	6	2	13.33%	4	36.36%
<b>Total</b>	26	15	100.00%	11	100.00%

The higher incidence of colonic malignancy 57.14% cases was in the age group of 51-60 years followed by 21.42% cases each from age

groups 31-40 and 41-50 years. Out of total 3 cases of amoebic colitis 50% cases belonged to age group of 21-30 years while other 50% cases

belonged to age group 31-40 years. All the 2 cases of polyps belonged to the age group 0-10 years.

Intubation values showed that the rigid sigmoidoscope was passed up to 25 cm in 55.76%, 20 cm in 22.64%, 30 cm in 13.46% and up to 15 cm in 7.69%. There was loss of vascular pattern with at places mucosal hyperaemia. Ulcers with normal intervening mucosa were also seen. The mucus exudate after scrapping showed cyst for *E. histolytica*. (**Table - 3**)

**Table – 3:** Intubation distance reached by rapid sigmoidoscope.

Distance from anal verge (cm)	No. of cases	Percentage
≤15	4	7.69%
Up to 20	12	22.64%
Up to 25	29	55.76%
Up to 30	7	13.46%

Distribution of various colorectal diseases showed Ulcerative colitis 26.92%, Cologenic malignancy 26.92%, Polyps 5.76%, amoebic colitis 11.53% and none of the lesions were found in 28.84% of the subjects (**Figure – 1**).

## Discussion

Sigmoidoscopy has historically been extremely valuable diagnostic tool in the study of colonic diseases. Since the barium enema provides an examination beyond the capability to sigmoidoscopy, but the sigmoidoscopy could be used directly to examine the more difficult areas of radiologic evaluation, the two techniques were obviously found complementary [7]. In the present study barium enema was also performed in same cases. Sigmoidoscopy has its advantages and disadvantages. Unfortunately, the procedure is not 100 percent accurate.

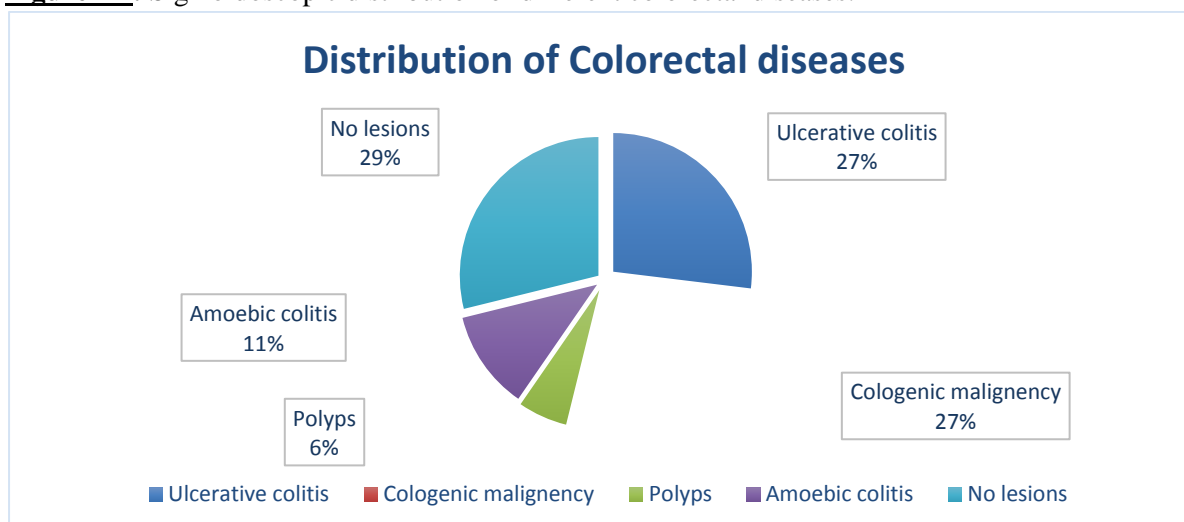
Several studies have compared the sensitivity and specificity of the radiologic and sigmoidoscopic examination of the lower gastrointestinal tract and have emphasized the fallibility and complementary nature of the two

investigations [8, 9]. In the present study, the sigmoidoscopy was undoubtedly better as a first line of investigation in the detection of lower colonic diseases presenting with bleeding. The total diagnostic yield of sigmoidoscopy was significantly good (15/26, 57.69%). No patient sustained a major complication and none required urgent treatment. This confirms the safety of the procedure which is consistent with studies of Gelfand, et al. and Abrams, et al. [10, 11].

Study by Hughes, et al., stated that 25% sigmoidoscopies fail to the full length of 25 cm. while Jackman, et al., quoted 14.8% of failure [12, 13]. In contrast to these studies full insertion upto 25 cm. failed in 23.07% of our examinations. Included in this, 3 cases were less than 10 years of age. Sigmoidoscope was passed to full length of 25 cm in 15 (57.69%) cases of our study group. The average distance achieved in our study with rigid sigmoidoscope was 23.82 cm. in the study by Leicester et al, the average distance to which rigid sigmoidoscope was inserted was  $17.7 \pm 4.0$  cm [14].

In all the above studies the incidence of ulcerative colitis was determined in the patients presenting with any of the gastrointestinal symptoms. In our study we had done sigmoidoscopy only in those patients who had bleeding as one of their chief complaints. The incidence of ulcerative colitis in our study group is 7 out of 26 cases (26.92%). In the study of Teague, et al., ulcerative colitis was found in 16 out of 85 cases of bleeding per rectum (18.82%) [15]. Screening for colonic carcinoma by stool occult blood testing has sensitivity of 75% [16]. In this present study it was as high as 100%. Hence a combination of sigmoidoscopy and stool occult blood testing will produce the best detection rate for colonic carcinoma. It has been emphasised by several authors that 75% of all colorectal carcinoma are found within the reach of rigid sigmoidoscopy [17, 18]. While in the present study it has seen that all 14 cases who presented with bleeding per rectum were within the reach of sigmoidoscope i.e. 100%.

**Figure – 1:** Sigmoidoscopic distribution of different colorectal diseases.



We have discussed the value of sigmoidoscopy in making the positive diagnosis in with bleeding per rectum that had negative response from preliminary investigation and even from radiological procedures. However, we fell that it serves an equally important function in helping to exclude serious colonic lesions. This enables us to reassure patient with frank rectal bleeding to redirect diagnostic effort away from the colon.

### Conclusion

The sigmoidoscopy allowed a better diagnostic yield (71%) than the barium enema. We did find age and sex predilection of colonic malignancy, which was found to be more common in males (32%), with age group 51- 60 years. In 28% cases the cause of the bleeding per rectum was not determined on rigid sigmoidoscopy that means lesions where beyond the reach of the sigmoidoscope and requires further evaluation by other means. The present study showed the feasibility of sigmoidoscopy as first line procedure without barium enema study in the lower gastrointestinal diseases presenting with bleeding per rectum.

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