

Etiological Spectrum of Diseases among the Patients Presenting with Per Rectal Bleeding Attending at Surgery Outpatient Department in a Tertiary Level Hospital

Mayin Uddin Mahmud^{1*} Md. Motahhar Hossain² Ajoy Kumer Ghosh³ Roksana Reza⁴

Abstract

Background: Per rectal bleeding is a problem that is frequently encountered by doctors. There is marked geographical variation in the frequency of different etiologies. This study was conducted to determine the frequency of various causes of per rectal bleeding in patients attending in a tertiary level hospital in Chittagong, Bangladesh.

Materials and methods : It was a retrospective study, and non-probability purposive sampling was done. All the patients over ten years of age presenting at the Surgery Outpatient Department with the complain of per rectal bleeding were included. A total of 685 patients were included in this study over a period of 2 years.

Results: Mean age of the patients was 36 ± 13 (Mean \pm SD) with a range of 10-82 years. Male-female ratio was 1.5:1. Haemorrhoids were the most common cause (34.6%) of per rectal bleeding, followed by chronic anal fissure (26.1%), chronic anal fissure with haemorrhoids (14.9%), colorectal polyps (11.4%) colorectal cancer (8.3%) and Inflammatory Bowel Diseases (IBD) (0.9%). No cause of per rectal bleeding was found in 3.8% of patients. Maximum patients with colorectal cancer presented in their fifth and sixth decades of life.

Conclusion: Haemorrhoids and fissures in ano are the most common causes of per rectal bleeding in our setting. However, the number of colorectal polyps and colorectal cancers are not negligible.

Key words: Colorectal carcinoma; Hemorrhoids; Per rectal bleeding.

Introduction

Per rectal bleeding refers to lower gastrointestinal bleeding. A lower Gastro-Intestinal (GI) bleed is

defined as bleeding from the lower GI tract, distal to the ligament of Treitz. The different parts included are the last part of the duodenum and the whole area of the jejunum, ileum, colon, rectum, and anus.¹

In patients with GI bleeding, about 20–33% are cases of lower GI bleeding.² Statistically, the incidence of upper GI bleeding is more than lower GI bleeding. One of its causes is that lower GI bleeding cases are underreported. The fact is that patients with lower GI bleeding usually do not visit their doctors initially. In Western countries, the annual incidence of per rectal bleeding is about 20–27 cases per 100,000 population.³ In a recent study at the National University Hospital of Iceland, the incidence of per rectal bleeding was 87/100000/year.⁴ The incidence of per rectal bleeding increases with age and is more common in men than women.⁵ A 200-fold increase is seen with advancing age from the third to ninth decades.⁶

Clinically, per rectal bleeding may be painful or painless with or without changes in bowel habits.⁷ The evaluation of bleeding per rectum should begin with thorough history and physical examination to provide valuable clues into the etiology and anatomical source of bleeding, thus highlighting significant medical conditions that may determine or alter the course of management.⁸ All patients with complains of per rectal bleeding should have a Digital Rectal Examination (DRE) and other physical examinations, which should be documented. DRE and proctoscopy are performed to exclude a low-lying rectal cancer or bleeding from haemorrhoids and/or fissures in ano. Further diagnostic examinations like sigmoidoscopy, colonoscopy and biopsy of any lesion can be done. In addition, angiography, nuclear scans, double-contrast barium enema, and small-bowel evaluation may be done to reach a final diagnosis.⁹

Most of the data from Western countries suggests that colonic diverticula are the most frequent source

1. Resident Surgeon of Surgery
Chittagong Medical College Hospital, Chattogram.
2. Associate Professor of Surgery
Chittagong Medical College, Chattogram.
3. Assistant Professor of Dermatology
Chittagong Medical College, Chattogram.
4. Post Graduate Student of Pharmacology
Chittagong Medical College, Chattogram

***Correspondence:** Dr. Mayin Uddin Mahmud
Cell : 01712 05 53 98
E-mail: dr.mayin@gmail.com

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of per rectal bleeding, followed by colorectal cancer, colorectal polyp, colitis, anorectal disease, and IBD.^{10,11} But in our subcontinent, the perspective is different.¹² There are no published data regarding the causes of per rectal bleeding in our country. A published data in Pakistan suggests that in this region, haemorrhoids (58%) are the most common cause of bleeding per rectum, followed by fissure-in-ano (27%) and colorectal carcinoma (8%). Rectal prolapse, Colorectal Polyps, Ulcerative colitis, Solitary rectal ulcer syndrome, and Diverticular disease contributed another 7 % and are uncommon.⁸ In another recent study conducted in India, common etiologies identified were hemorrhoids (19.5%), inflammatory bowel disease (IBD) (19.5%) colorectal carcinoma (17.4%), infective causes (11.6%), and radiation proctitis (9.4%). In patients with age <60 years most common cause found was IBD, while in patients >60 years was carcinoma colon.¹³

This study was conducted to document the different etiological factors for patients presenting with per rectal bleeding in the surgery outpatient department in Chittagong Medical College Hospital, Chattogram, Bangladesh.

Materials and methods

A total of 685 patients were included in this study. It is a retrospective type of descriptive study, and non-probability purposive sampling was done. All the patients over ten years of age presenting at SOPD with the complain of per rectal bleeding were included. Patients presenting with maelena and those with a known case of bleeding disorders, on anticoagulant drugs, suffering from chronic liver disease and renal failure were excluded. Detail history of the presenting complains along with proper family history was taken. Relevant physical examinations, including digital rectal examination, proctoscopy, and abdominal examination were done on all patients. Sigmoidoscopy, Colonoscopy, and Barium enema X-ray or other special investigations were done as required. During sigmoidoscopy or colonoscopy, multiple representative tissues were taken for histopathology if any suspicious lesion would have been found. If any colorectal polyp was found during these procedures, the polyp would have been excised in the same setting or done in another setting as required, and tissue biopsy

would have been done in all cases. The final diagnosis was made with detailed history, proper clinical examinations, relevant investigations, and biopsy reports. Those patients requiring further definitive management were admitted at indoors. All the findings were recorded in a structured record book. Data will be processed and statistical analysis will be done by SPSS version 16.0 for Windows software. Necessary permission was obtained from the respective authorities before start the study.

Results

A total of 685 patients were included in this study—all the patients presented with per rectal bleeding. The mean age of the patients was 36 ± 13 (Mean \pm SD) with a range of 11-82 years. In our study highest number of patients were found in the third decade, i.e., 237 patients (34.6%), followed by 173 patients (25.3%) in the fourth decade, 111 patients (16.2%) in the fifth decade, 71 patients (10.4%) in the sixth decade, 61 patients (8.9%) in the second decade, 31 patients (4.5%) in the seventh and eighth decade and one patient (0.1%) in the first decade of life. Male-female ratio was 1.5:1. The highest number of male patients presented in their third decade of life, i.e., 129 (31%) of the total male patients. The highest number of female patients also presented in their third decade of life, i.e., 108 (41%) of the total female patients (Figure 1).

Out of the 685 patients, 347 patients (50.6%) presented with painless per rectal bleeding, and 338 patients (49.4%) presented with painful per rectal bleeding.

The frequency distribution table of causes of per rectal bleeding (Table I) represents that haemorrhoids are the most common cause (34.6%) of per rectal bleeding, followed by chronic anal fissure (26.1%), chronic anal fissure with haemorrhoids (14.9%), colorectal polyps (11.4%) and colorectal cancer (8.3%) and Inflammatory Bowel Diseases (IBD) (0.9%). Apparently no cause of per rectal bleeding was found in 3.8% of patients.

Haemorrhoids, chronic anal fissure, and chronic anal fissure with haemorrhoids comprise 518 patients (75.6%). Maximum numbers of these cases were found in their third decade of life (35.9%), followed by the fourth decade (29%) and

fifth decade (16%) (Table II). The mean age of these patients was 35.8±12.4, with a range of 13-80 years. Male-female ratio was 1.32:1.

A total of 78 patients (11.4%) were diagnosed with colorectal polyps. Of them, 56 (71.8%) were rectal polyps, and 22 (28.2%) were colonic polyps. The highest number of patients was presented in their third decade (33 patients, 42.3%). The mean age at presentation was 28.5±11.7, with a range of 10 to 70 years. Male-female ratio was 3.1:1. On histopathological review, 31 patients (39.7%) were found to have adenomatous polyps, and 47 patients (60.3%) had non-adenomatous types of polyps.

A total of 57 patients were diagnosed with colorectal carcinoma (8.3%). Out of them, 41 patients (6%) were diagnosed with rectal carcinoma, and 16 patients (2.3%) were diagnosed with colonic carcinoma. Analyzing the malignant causes of per rectal bleeding according to age and gender, maximum patients presented in their fifth and sixth decades, i.e., 17 patients in each group (29.8%) followed by seventh and eighth decades (9 patients, 15.8%). The mean age was 48.4±13.3 with a range of 17-75 years. 46 patients (80.7%) with colorectal carcinoma were male, and 11 patients (19.3%) were female, with a male-female ratio of 4.2:1 (Table III).

Table I Causes of per rectal bleeding among the respondents

Causes	Frequency	Percent (%)
Haemorrhoids	237	34.6
Chronic Anal Fissure	179	26.1
Chronic anal fissure with Haemorrhoids	102	14.9
Rectal Polyp	56	8.2
Colonic Polyp	22	3.2
Rectal Carcinoma	41	6.0
Colonic Carcinoma	16	2.3
IBD	6	0.9
No cause	26	3.8
Total	685	100.0

Table II Causes of per rectal bleeding according to age

Causes	Age (Years)						Total
	11-20	21-30	31-40	41-50	51-60	>60	
Haemorrhoids	12	71	66	41	32	15	237
	5.1%	30.0%	27.8%	17.3%	13.5%	6.3%	100.0%
Chronic Anal Fissure	18	80	46	24	8	3	179
	10.1%	44.7%	25.7%	13.4%	4.5%	1.7%	100.0%
Chronic anal fissure with Haemorrhoids	2	36	38	18	7	1	102
	2.0%	35.3%	37.3%	17.6%	6.9%	1.0%	100.0%

Causes	Age (Years)						Total
	11-20	21-30	31-40	41-50	51-60	>60	
Rectal Polyp	18	25	10	2	1	0	56
	32.1%	44.6%	17.9%	3.6%	1.8%	.0%	100.0%
Colonic Polyp	5	7	4	2	3	1	22
	22.7%	31.8%	18.2%	9.1%	13.6%	4.5%	100.0%
Rectal Carcinoma	1	5	5	12	12	6	41
	2.4%	12.2%	12.2%	29.3%	29.3%	14.6%	100.0%
Colonic Carcinoma	1	1	1	5	5	3	16
	6.2%	6.2%	6.2%	31.2%	31.2%	18.8%	100.0%
IBD	3	1	0	2	0	0	6
	50.0%	16.7%	.0%	33.3%	.0%	.0%	100.0%
No cause	2	11	3	5	3	2	26
	7.7%	42.3%	11.5%	19.2%	11.5%	7.7%	100.0%
Total	62	237	173	111	71	31	685
	9%	34.6%	25.3%	16.2%	10.4%	4.5%	100.0%

Table III Malignant causes of per rectal bleeding according to age and gender

			Age Scale						Total
			11-20	21-30	31-40	41-50	51-60	>60	
Male	Rectal Carcinoma	Count	0	4	4	9	11	5	33
		% within Diagnosis	.0%	12.1%	12.1%	27.3%	33.3%	15.2%	100.0%
	Colonic Carcinoma	Count	1	0	1	4	4	3	13
		% within Diagnosis	7.7%	.0%	7.7%	30.8%	30.8%	23.1%	100.0%
Total	Count		1	4	5	13	15	8	46
		% within Diagnosis	2.2%	8.7%	10.9%	28.3%	32.6%	17.4%	100.0%
Female	Rectal Carcinoma	Count	1	1	1	3	1	1	8
		% within Diagnosis	12.5%	12.5%	12.5%	37.5%	12.5%	12.5%	100.0%
	Colonic Carcinoma	Count	0	1	0	1	1	0	3
		% within Diagnosis	.0%	33.3%	.0%	33.3%	33.3%	.0%	100.0%
Total	Count		1	2	1	4	2	1	11
		% within Diagnosis	9.1%	18.2%	9.1%	36.4%	18.2%	9.1%	100.0%

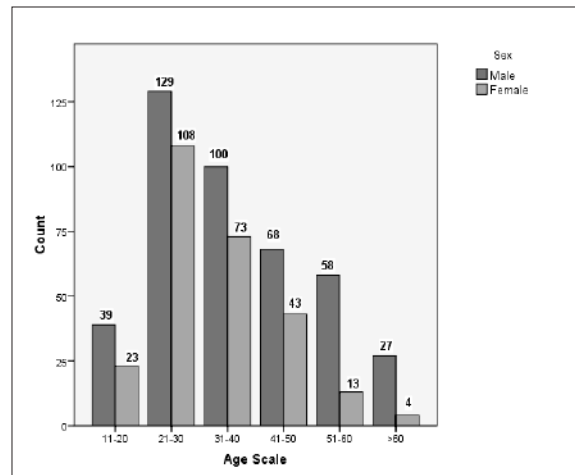


Figure 1 Age distribution of the respondents according to gender

Discussion

Multiple factors make the identification of the bleeding source in per rectal bleeding is challenging. These include a diversity of potential sources, the length of bowel involved, the need for colon cleansing, and the intermittent nature of bleeding.¹⁴ Thorough clinical history and physical examination, including DRE and proctoscopy, should be part of the initial evaluation of all patients presenting with bleeding per rectum. However, positive findings on rectal examination do not preclude a concomitant abnormal finding on colonoscopy. Colonoscopy is the best test for confirming the source of per rectal bleeding and excluding the ominous diagnoses such as malignancy. The diagnostic yield of colonoscopy in per rectal bleeding is 85.7%.²

In our study, colonoscopy was the most frequently used diagnostic modality, with the ability to establish the bleeding source in 96.2% of cases. Similar results have been reported by Jensen and Machicado and Strate and Naumann, who found the composite diagnostic yield of 91% and 82% for colonoscopy respectively.^{16,17} Khan F et al. found it 92.43%.¹⁸ There are other tools for detecting the source of bleeding, like radionuclide scintigraphy and angiography, but there is no scope for these investigations in our setting.

In our study mean age of the patients was 36 ± 13 (Mean \pm SD) with a range of 11-82 years. Mehanna et al. reported mean age of 39 years with a range of 22 to 55 years.¹⁵ In their study, Manzoor A et al found that the mean age was 38 ± 16 years, with a wide range from 13 to 80 years.⁸ The maximum number of patients presented in their third decade (34.6%), followed by the fourth decade (25.3%) and fifth decade (16.2%). Male to female ratio in our study was 1.5:1. Mehanna et al. reported a male to female ratio of 1.8:1 and Van Rosendaal et al. reported a ratio of 1.2:1.^{15,19} Our observations are similar to these studies.

In our study, haemorrhoids are the most common cause of per rectal bleeding (34.6%), followed by chronic anal fissure (26.1%) and chronic anal fissure with haemorrhoids (14.9%). Together these three causes comprise 75.6% of the patients presented with per rectal bleeding. 64.9% of these cases were found in their third and fourth decades of life. The male to female ratio was 1.32:1. Our findings are supported by a study conducted by

Manzoor A et al who recorded 58% of patients presented with complaints of per rectal bleeding had haemorrhoids, and 27% had chronic anal fissures.⁸ Collectively these two benign pathologies are responsible for 85% of their cases. More than 50% of patients in their study were in third and fourth decades of life. They found equal distribution in males and females. Other studies also stated that haemorrhoids are the most common cause of per rectal bleeding.^{20,21}

Total of 78 patients (11.4%) were diagnosed with colorectal polyps. Our findings are similar to a study conducted by Jehangiri et al. in Pakistan.² They found that 14.3% of patients presenting with per rectal bleeding were suffering from colorectal polyps. Another study conducted by Dar et al in North India found that colorectal polyps contributed to 23.3% of the patients with per rectal bleeding.¹³ Manzoor A et al found that colorectal polyps were responsible for only 2% of causes of per rectal bleeding.⁸

Colorectal carcinoma is one of the most common cancers in the world as well as in Bangladesh. In our study, 8.3% of patients with per rectal bleeding were diagnosed with colorectal carcinoma. Maximum patients presented in their fifth and sixth decades (59.6%). The mean age was 48.4 ± 13.3 with a range of 17-75 years. The male to female ratio was 4.2:1. These observations are similar to a study conducted by Manzoor A et al. in Pakistan.⁸ They found that the frequency of per rectal bleeding due to colorectal carcinoma was 8%. The male to female ratio was 4.3:1. Our results are also supported by other studies conducted by Gayer et al where they found that 11.84% of patients with per rectal bleeding diagnosed with colorectal carcinoma and Dar et al who found 12% of patients diagnosed with colorectal carcinoma.^{22,13}

Our study found that 0.9% of patients with per rectal bleeding were diagnosed with Inflammatory Bowel Diseases (IBD). Other studies in this region support this finding. Manzoor A et al. reported that IBD is responsible for 1% of cases of per rectal bleeding.⁸

Geographical location plays an important role in identifying the etiological factors of per rectal bleeding.^{23,24} Most of the published articles in this region are consistent with our observations. But when compared with the other international studies,

the etiological spectrum of per rectal bleeding differs from our study. Even studies conducted in northern regions of India differ from our study. Lakhanpal et al. conducted a study on the patients with per rectal bleeding at Sub-Himalayas.²⁵ They found a higher incidence of IBD (19.5%) and colorectal carcinoma (17.4%). In their study, Dar et al. also found colorectal carcinoma (29.3%) as the most common cause of per rectal bleeding in North India.¹³ A study from the western world by Longstreth et al. showed that common causes of per rectal bleeding as diverticulosis (41.6%), colorectal cancer (9.1%), and ischemic colitis (8.7%).²⁶ Bai et al. reviewed literature of 53,951 patients of per rectal bleeding in China, and the most common etiology found was colorectal cancer (24.4%), followed by colorectal polyps (24.1%), colitis (16.8%), anorectal diseases (9.8%) and IBD (9.5%).¹¹ Khan F et al. conducted a study in China, and they found that the most common cause of per rectal bleeding was colorectal polyps (35.42%), followed by IBD (16.57%), solitary rectal ulcer (8.57%), unknown origin (8.57%), hemorrhoids (7.42%), growth (4.57%), ischemic colitis (3.42%), diverticulosis (2.85%) and vascular ectasia (2.28%).¹⁸ Different causes of per rectal bleeding in these studies suggest the difference in etiologies based on geographical variation.

Limitations

This study has its limitation of being a retrospective one. Some data may be missing during record keeping. Moreover, data from a single government hospital does not reflect the whole society because middle and low socioeconomic status patients come there.

Conclusion

Benign anorectal pathologies like haemorrhoids and fissures in ano are the most common etiology among the patients presenting with per rectal bleeding at the surgery outpatient department in our institute. However, the incidence of adenomatous colorectal polyps and colorectal carcinoma is not negligible. Our society should develop awareness for the early diagnosis and management of colorectal carcinoma.

Recommendations

A large population-based study should be conducted throughout the country for a long duration. A prospective study is more beneficial as there is less chance of data missing. Based on the findings of this study, a population-based colorectal cancer screening program may be established in the country.

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Contribution of Authors

MUM-Conception, design, acquisition of data, manuscript writing and final approval.

MMH-Interpretation of data, critical revision and final approval.

AKG-Data analysis, literature review and final approval.

RR-Data analysis, manuscript writing and final approval.

Disclosure

All the authors declared no competing interest.

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