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Common colonoscopic findings in patients with lower gastrointestinal bleeding

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Abstract

Lower gastrointestinal (LGI) bleeding traditionally has been defined as bleeding distal to the ligament of Treitz. It is common, accounting for one quarter to one third of all hospital admissions for overall GI bleeding, most patients are older than 70 years.

.Lower GI bleeding is associated with significant mortality, health care costs and increased length of hospitalization, emphasizing the need for effective evaluation and treatment.

The clinical presentation of gastrointestinal hemorrhage varies with the location of the bleeding source, the intensity of the bleed, and the presence of comorbidities that affect the ability to tolerate blood loss. Lower GI bleeding classically presents with hematochezia, however bleeding from the right colon or the small intestine can present with melena.

Common causes of lower GI bleeding include diverticulosis, hemorrhoids, ischemic colitis, inflammatory bowel disease, colon cancer polyp, rectal ulcer, vascular ectasia and post-polypectomy bleeding. Colonoscopy is the main modality used for the diagnosis of lower GI bleeding.

Objective: To determine the frequency of common colonoscopic findings in patients with lower GI bleed.

Subjects and methods: Departments of Gastroenterology and Hepatology, Ayub Teaching Hospital, Abbottabad. Study was conducted from January to December 2024. It is Descriptive Cross-sectional study. A total of 136 patients with lower GI bleeding of age between 20 to 65 years and either gender were included in the study on the basis of non-probability consecutive sampling.

Colonoscopy was performed on each patient and their findings were documented. The data was collected through a structured proforma and analyzed using SPSS 20.

Results: A total of 136 patients with lower GI bleed were included in this study. There were 66 males (48.5%) and 70 females (51.5%).The most common colonoscopic finding was hemorrhoids (30.1%, n=41) with male and female distribution of 30.3% and 30% respectively. Followed by polyp (24.3%, n=33) with male and female distribution of 25.8% and 22.9% respectively .Polyp was more common among age group 20 to 35 years (30%, n=21).Next common endoscopic finding was rectal ulcer and inflammatory bowel disease found in 16.2% of patients. Colonic carcinoma was found in 18 patients (13.2%).Colonic carcinoma was more common among age group above 50 years (26.9%).

Key Words: Lower GI bleed, ligament of treitz, hematochezia, hemorrhoids, polyp, inflammatory bowel disease.

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Introduction

Lower gastrointestinal (LGI) bleeding traditionally has been defined as bleeding distal to the ligament of Treitz. It is common, accounting for one quarter to one third of all hospital admissions for overall GI bleeding. Severe lower GI bleeding is however, less common with an annual incidence of 20-30 cases per 100,000 individuals.[1] Lower GI bleeding is associated with significant mortality, health care costs and increased length of hospitalization, emphasizing the need for effective evaluation and treatment.[2]

The clinical presentation of gastrointestinal hemorrhage varies with the location of the bleeding source, the intensity of the bleed, and the presence of comorbidities that affect the ability to tolerate blood loss.[4] Lower GI bleeding classically presents with hematochezia, however bleeding from the right colon or the small intestine can present with melena. Bleeding from the left side of the colon tends to present bright red in color, whereas bleeding from the right side of the colon often appears dark or maroon-colored and may be mixed with stool.[5]

Options for the investigation of acute lower gastrointestinal bleeding include colonoscopy, nuclear scintigraphy, CT angiogram and catheter angiography. [6]

Most cases of acute colonic bleeding will stop spontaneously[7], however the general goals of the management of lower gastrointestinal are resuscitation, diagnosis, hemostasis, and, in some cases, prevention of recurrent bleeding. The importance of these measures ultimately depends on the source of bleeding. Vascular sources such as diverticular bleeding, angioectasias, and postpolypectomy bleeding can result in large-volume blood loss and are the most likely to benefit from urgent interventions and bleeding control. On the other hand, diagnosis and treatment of the underlying condition are priorities in the management of inflammatory sources such as ischemic colitis and bleeding neoplastic lesions.[3]

Diverticulosis is considered to be the most common cause of lower GI bleed. It is present in 30%of cases. Other causes include hemorrhoids in 14%, ischemic colitis in 12%, inflammatory bowel disease in 9%,postpolypectomy in 8%, colon cancer/polyp in 6%, rectal ulcer in 6%, and vascular ectasia in 3% of cases.[7]

Colonoscopy is the primary modality for establishing a diagnosis, risk stratification, and treating some of the most common causes of colonic bleeding.[7]

The objective of the currently designed study is to determine the common Endoscopic findings in patients with lower gastrointestinal bleeding in Ayub Teaching Hospital, Abbottabad. This study will provide us with local statistics as no such study is carried out in our local population.

Materials and methods:

Study design: Cross sectional descriptive study.

Setting: Department of Gastroenterology, Ayub Teaching Hospital, Abbottabad.

Duration: Study was conducted from January to December 2024.

Sample technique: Non probability consecutive sampling

Sample size: Sample size was 136, calculated using WHO software of sample size determination with the following assumption:

Expected frequency of diverticulosis is 30%. Other causes include hemorrhoids in 14%, ischemic colitis in 12%, inflammatory bowel disease in 9%, postpolypectomy in 8%, colon cancer/polyp in 6%, rectal ulcer in 6%, and vascular ectasia in 3% of cases.[7]

Confidence level =95%.

Margin of error =5%

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Inclusion criteria:

1. Patients presenting with visible rectal bleeding as their chief complaint.
2. Both genders.
3. Age between 20 and 65.

Exclusion criteria:

1. Patients with suspected upper gastrointestinal source of bleeding, i.e., history of hematemesis/melena or gastric aspirates containing coffee-ground material or bright red blood.
2. Patients with rectal bleeding due to bleeding diatheses.
3. Patients with a history of previous bowel resection.

Because above factors act as a confounder and effect and introduce bias in the study results.

Data collection:

A written permission was obtained from the hospital ethical and research committee before starting the study. All patients meeting the inclusion criteria were included in the study through OPD. The diagnostic criteria were based upon patients with hematochezia. The purpose and benefits of the study were explained to the patients and they were assured that the study was being done purely for research and data publication. A written informed consent was obtained.

All the patients were admitted in the ward and prepared for colonoscopy after taking detailed history and clinical examination followed by routine investigations. All the patients were subjected to colonoscopy on the next list and the colonoscopic procedures were performed by an experienced gastroenterologist having more than five years of experience to detect common colonoscopic findings such as hemorrhoids,polyp, rectal ulcer inflammatory bowel disease and colonic carcinoma.

All the above mentioned information including name, age and gender was recorded on a pre-designed proforma . Exclusion criteria were strictly followed to control confounders and bias in the study results.

Data analysis:

All the data was entered and analyzed using SPSS (version 20). Frequency and percentages were calculated for categorical variables like gender and common colonoscopic findings (hemorrhoids, polyp, rectal ulcer, inflammatory bowel disease, colonic carcinoma). Mean and Standard Deviation was calculated for numerical variables like age. Colonoscopic findings were stratified among the age and gender to see the effect modifiers. All the results were presented as tables and graphs.

RESULTS

A total of 136 patients with lower GI bleed were included in this study. There were 66 males (48.5%) and 70 females (51.5%) (Figure 1, Table 1).The minimum age was 20 years and maximum 65 years. The mean age was 37.58 years with standard deviation of 13.84 years (Table 2).The mean age for male was 36.43 years with a standard deviation of 14.24 years and for females it was 38.67 years with standard deviation of 13.46 years (Table 3). The most common colonoscopic finding was hemorrhoids (30.1%, n=41) with male and female distribution of 30.3% and 30% respectively, followed by polyp (24.3%, n=33) with male and female distribution of 25.8% and 22.9% respectively (Table 5 and Table 6).Polyp was more common among age group 20 to 35 years (30%, n=21) as shown in Table 7.Next common endoscopic finding was rectal ulcer and inflammatory bowel disease found in 16.2% of patients. Colonic carcinoma was found in 18 patients (13.2%). Colonic carcinoma was more common among age group above 50 years (26.9%) as shown in Table 6 and Table 7.

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Table 1: Frequency of the patients according to sex.

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Male	66	48.5	48.5	48.5
female	70	51.5	51.5	100.0
Total	136	100.0	100.0	

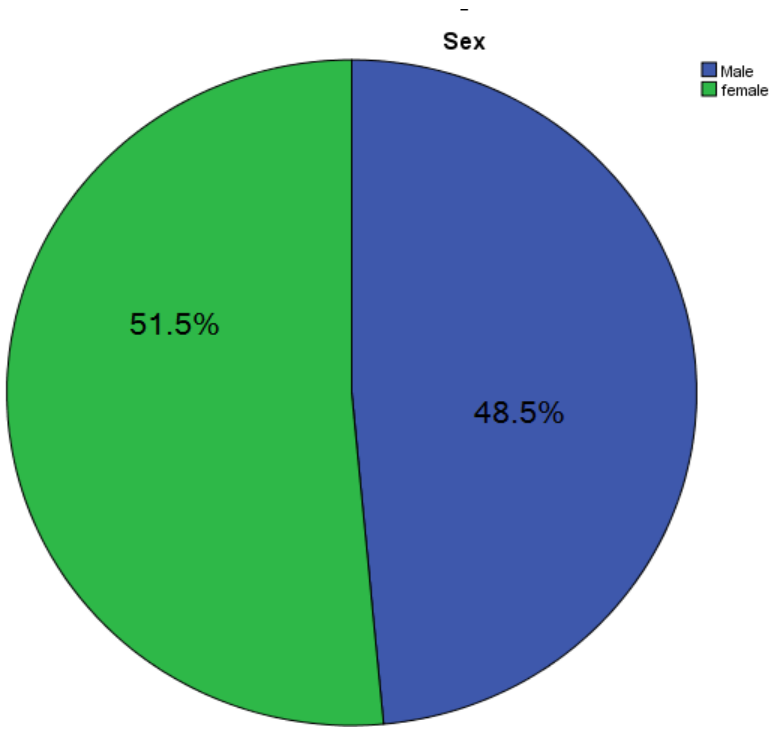

Figure 1: Distribution of patients according to gender (%)

Table 2: Descriptive Statistics of Age of the patients.

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	N	Minimum	Maximum	Mean	Std. Deviation
Age	136	20.00	65.00	37.5882	13.84436
Valid N (list wise)	136				

Table 3: Mean and Standard Deviation of Age of patients of each sex.

	Sex	N	Mean	Std. Deviation	Std. Error Mean
Age	Male	66	36.4394	14.24633	1.75360
	Female	70	38.6714	13.46678	1.60959

Table 4: Frequency distribution of patients according to age groups.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20 to 35 years	70	51.5	51.5	51.5
	36 to 50 years	40	29.4	29.4	80.9
	Above 50 years	26	19.1	19.1	100.0

	Total	136	100.0	100.0	

Table 5: Frequency of colonoscopic findings (percent)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Hemorrhoids	41	30.1	30.1	30.1
	Polyp	33	24.3	24.3	54.4
	Rectal Ulcer	22	16.2	16.2	70.6
	Colonic Carcinoma	18	13.2	13.2	83.8
	Inflammatory Bowel Disease	22	16.2	16.2	100.0
	Total	136	100.0	100.0	

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Table 6: Frequency of colonoscopic findings - (Sex wise distribution)

Sex * Findings Crosstabulation

			Findings					
			Hemorrhoids	polyp	Rectal Ulcer	Colonic Carcinoma	Inflammatory Bowel Disease	Total
Sex	Male	Count	20	17	9	10	10	66
		% within Sex	30.3%	25.8%	13.6%	15.2%	15.2%	100.0%
		% within Findings	48.8%	51.5%	40.9%	55.6%	45.5%	48.5%
		% of Total	14.7%	12.5%	6.6%	7.4%	7.4%	48.5%
	female	Count	21	16	13	8	12	70
		% within Sex	30.0%	22.9%	18.6%	11.4%	17.1%	100.0%
		% within Findings	51.2%	48.5%	59.1%	44.4%	54.5%	51.5%
		% of Total	15.4%	11.8%	9.6%	5.9%	8.8%	51.5%
Total		Count	41	33	22	18	22	136
		% within Sex	30.1%	24.3%	16.2%	13.2%	16.2%	100.0%
		% within Findings	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		% of Total	30.1%	24.3%	16.2%	13.2%	16.2%	100.0%

Table 7: Frequency of colonoscopic findings according to age groups.
Age groups * Findings Crosstabulation

			Findings					
			Hemorrhoids	polyp	Rectal Ulcer	Colonic Carcinoma	Inflammatory Bowel Disease	Total
Age groups	20 to 35 years	Count	13	21	17	3	16	70
		% within Age groups	18.6%	30.0%	24.3%	4.3%	22.9%	100.0%
		% within Findings	31.7%	63.6%	77.3%	16.7%	72.7%	51.5%
		% of Total	9.6%	15.4%	12.5%	2.2%	11.8%	51.5%

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	36 to 50 years	Count	18	5	4	8	5	40
		% within Age groups	45.0%	12.5%	10.0%	20.0%	12.5%	100.0%
		% within Findings	43.9%	15.2%	18.2%	44.4%	22.7%	29.4%
		% of Total	13.2%	3.7%	2.9%	5.9%	3.7%	29.4%
	Above 50 years	Count	10	7	1	7	1	26
		% within Age groups	38.5%	26.9%	3.8%	26.9%	3.8%	100.0%
		% within Findings	24.4%	21.2%	4.5%	38.9%	4.5%	19.1%
		% of Total	7.4%	5.1%	.7%	5.1%	.7%	19.1%
Total		Count	41	33	22	18	22	136
		% within Age groups	30.1%	24.3%	16.2%	13.2%	16.2%	100.0%
		% within Findings	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		% of Total	30.1%	24.3%	16.2%	13.2%	16.2%	100.0%

DISCUSSION

Lower gastrointestinal (LGI) bleeding traditionally has been defined as bleeding distal to the ligament of Treitz [8]. It is common, accounting for one quarter to one third of all hospital admissions for overall GI bleeding. Most patients are older than 70 years.

Severe lower GI bleeding is however, less common with an annual incidence of 20-30 cases per 100,000 individuals [9]. Lower GI bleeding is associated with significant mortality, health care costs and increased length of hospitalization, emphasizing the need for effective evaluation and treatment [3].

The clinical presentation of gastrointestinal hemorrhage varies with the location of the bleeding source, the intensity of the bleed, and the presence of comorbidities that affect the ability to tolerate blood loss [4]. Lower GI bleeding classically presents with hematochezia, however bleeding from the right colon or the small intestine can present with melena. Bleeding from the left side of the colon tends to present bright red in color, whereas bleeding from the right side of the colon often appears dark or maroon-colored and may be mixed with stool [5].

Most cases of acute colonic bleeding will stop spontaneously, however the general goals of the management of lower gastrointestinal are resuscitation, diagnosis, hemostasis, and, in some cases, prevention of recurrent bleeding. The importance of these measures ultimately depends on the source of bleeding. Vascular sources such as diverticular bleeding, angioectasias, and post-polypectomy bleeding can result in large-volume blood loss and are the most likely to benefit from urgent interventions and bleeding control. On the other

hand, diagnosis and treatment of the underlying condition are priorities in the management of inflammatory sources such as ischemic colitis and bleeding neoplastic lesions [7].

Common causes of lower GI bleeding includes diverticulosis, hemorrhoids, ischemic colitis, inflammatory bowel disease, colon cancer, polyp, rectal ulcer, vascular ectasia and post-polypectomy bleeding.

Many studies have been done in the past in all parts of the world to find the frequency of various etiologies of lower gastrointestinal bleeding based on colonoscopic findings. This study was performed to see etiology of lower gastrointestinal bleeding in our set up.

In our study mean age of presentation was 37.58±13.84 years. This is close to the mean age of 37.22±10.68 and 38±16 found by Nazish et al and Manzoor et al respectively [10, 11].While on the other hand western studies showed that lower gastrointestinal bleeding was more common in older age as Jensen et al and Chaudhery et al found that mean ages of patients in their studies were 64.5years and 75 years respectively [12, 13]. This difference in age is probably due to difference in etiologies prevalent in the two parts of world.

Our study showed female preponderance as 51.5% were female and 48.5% were male.

Similarly Manzoor et al found that lower gastrointestinal bleeding was more common in female (45% patient were male and 55% female) [11]. On other hand Nazish et al showed male preponderance (59.05% were male and 40.95% were female) [10]. Zia and Bhatti et al found significant male preponderance (74% and 61.9% patients were male respectively) [14, 15]. Sanchezet al found that male to female ratio was 1:1[16]. So we can say that lower gastrointestinal bleeding has no association with any particular gender.

In our study we observed that the most common cause of lower gastrointestinal bleeding was hemorrhoids found in 30.1% of cases. Nazish et al also found that the most common cause of lower GI bleeding was hemorrhoids found in 40.9% of cases [10]. Manzoor et al also found that most common cause of lower gastrointestinal bleeding was hemorrhoids and even a higher percentage of 58% was observed [11]. Bhatti et al found 22.8% cases of hemorrhoids [11]. Makela found it in 28% cases and Gayer et al observed 22.5% cases [17, 18]. This indicates that hemorrhoids are a common cause of lower GI bleeding not only in our country but also in the west.

Next common cause of lower GI bleeding in our study was polyp found in 24.3% of cases. Polyp occurrence was 21% in the age group of 20 to 35 years. Fernandez found it in 25.1% of cases [19]. Bhatti et al found it in 17% of cases [15], while Nazish et al and Zia et al found it in 2% of cases [10, 14]. Makela et al and Nasir et al found it in 11% and 2.7% respectively [17, 20]. So in our study polyp as a cause of lower GI bleed was common in age groups of 20 to 35 years.

Colonic carcinoma was found in 13.2% of cases. Its occurrence was 20% in age groups 36 to 50 years, while above 50 years its occurrence was 26.9%.Nasir et al found it in 6.9% cases [20]. Manzoor et al found 8%, Zia et al 10% and Bhatti et al 11.1% cases of malignant growth [11, 14, 15]. Nazish et al found it in 7.1% of cases [10]. Indian studies by Goenka and Bhargava et al found colonic cancer in 7.2 and 10% cases respectively [21, 22]. Fernandez et al and Gayer et al found it in 12.6 and 12.7% cases respectively [19, 18]. These figures indicate that colorectal cancer is also increasing in our country approaching western figures. This is perhaps due to increased intake of western style diet.

No case of diverticula or post-polypectomy bleeding as a cause of lower GI bleeding was observed in our study.

CONCLUSION

Hemorrhoids are the most common cause of lower GI bleeding followed by polyp, rectal ulcer, inflammatory bowel disease and colonic carcinoma. Flexible colonoscopy has a very important role in the diagnosis of lower GI bleeding. Video scopes have increased the diagnostic yield to a great extent. Etiology

of lower GI bleeding in our set up is different from that in the western population in the sense that diverticula which is a common cause in the west but uncommon in our study. There is a need to develop awareness among our people about bleeding per rectum and its causes with emphasis on early diagnosis and management by doctors qualified and experienced in this field.

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