

## Original Article

# Colonoscopic Findings in Patients with Rectal Bleeding Suspected to Have Internal Hemorrhoids: A Cohort Study

Hoshmand R. Asaad<sup>1</sup>, Heero Ismael Faraj<sup>1</sup>, Dana T. Gharib<sup>1</sup>, Mohammed Shaikhani<sup>1</sup>, Karokh F. Hama Hussein<sup>1</sup>, Deari A. Ismaeil<sup>2</sup>, Dlshad Hama Saeed Ahmed<sup>3</sup>, Omar H. Ghalib Hawramy<sup>3</sup>, Hemn H. Kaka Ali<sup>3</sup>, Jihad Ibrahim Hama<sup>4</sup>, Hiwa O. Abdullah<sup>5\*</sup>, Rebaz E. Ali<sup>3</sup>

1. Gastroenterology and Hepatology Teaching Hospital, Sulaymaniyah, Kurdistan, Iraq
2. College of Medicine, University of Sulaimani, Sulaymaniyah, Kurdistan, Iraq
3. Smart Health Tower, Madam Mitterrand, Sulaymaniyah, Kurdistan, Iraq
4. Research Center, University of Halabja, Halabja, Kurdistan, Iraq
5. Department of Biology, College of Education, University of Sulaimani, Sulaymaniyah, Kurdistan, Iraq

\* **Corresponding author:** [hiewaom96@gmail.com](mailto:hiewaom96@gmail.com) (H.O. Abdullah). Mukryian Qtr 71, house number 57, Zip code: 46001, Sulaymaniyah, Kurdistan, Iraq

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**Abstract****Introduction**

Rectal bleeding is a prevalent clinical symptom associated with various anorectal pathology. Colonoscopy is a valuable diagnostic and therapeutic tool for various colorectal diseases. The objective of this study was to identify potential alternative diagnoses for hematochezia observed during colonoscopy, which initially appeared to be caused by hemorrhoids.

**Methods**

A retrospective study was conducted on a total of 80 consecutive patients who had been clinically diagnosed with rectal bleeding. The patients underwent a digital rectal examination and were then prepared for a total colonoscopy. Biopsies were taken from patients who had abnormal findings and sent for histopathological examination.

**Results**

A total ileo-colonoscopy was performed on 80 patients presenting with rectal bleeding. The male-to-female ratio was 1.05:1, with a mean age of 45.40±15.54 years old. About 56.3% of the patients had only hemorrhoids, while other findings were observed in 43.7%. The other findings were anal fissures, proctitis, colitis, solitary rectal ulcer, colorectal carcinoma, diverticula, or polyps.

**Conclusion**

Rectal bleeding can stem from various causes, among them hemorrhoids. Thus, colonoscopy stands as an essential diagnostic tool for accurately identifying the causes of the condition.

**1. Introduction**

Lower gastrointestinal bleeding (LGIB) refers to bleeding that occurs from the area distal to the ligament of Treitz [1]. Obscure

LGIB can manifest as either occult or overt bleeding. Overt bleeding might present as acute, massive, or chronic. The overall mortality rate for LGIB is approximately 11%, with the acute and massive bleeding category accounting for up to 21% [2].

Rectal bleeding (RB) or hematochezia is a frequent complication with a prevalence of between 13% and 34% that needs extensive investigation [3]. Distinguishing between colorectal malignant disease and benign rectal lesions based solely on the presence of bleeding can be challenging [3]. Bleeding from anal lesions such as hemorrhoids and fissures is a common cause of RB; it can also be accompanied by colorectal carcinoma [4]. In high-risk patients with positive fecal immunochemical tests (FIT) or fecal occult blood (FOB), colorectal endoscopy is recommended [5]. Colonoscopy is a valuable diagnostic tool for identifying precancerous lesions, often visually resembling polyps during endoscopic examination. This proactive approach contributes to lowering mortality rates associated with colorectal carcinoma [4]. The common causes of RB include anal fissure, inflammatory bowel disease and other forms of colitis, solitary rectal ulcers, colorectal carcinoma, diverticulitis, and polyps [3]. When there is suspicion that the bleeding originates from the LGI tract, a colonoscopy becomes a preferred diagnostic and therapeutic approach [6]. The bleeding rate and the amount of blood loss are crucial factors in shaping the diagnostic approach [7].

The objective of this study was to identify potential alternative diagnoses for hematochezia observed during colonoscopy, which initially appeared to be caused by hemorrhoids. The work has been reported according to the STROCSS criteria [8].

## 2. Methods

### 2.1. Study design and Setting

This retrospective cohort study included eighty consecutive patients with LGIB who were referred to the Department of Colonoscopy at the Kurdistan Center for Gastroenterology and Hepatology in 2017 and 2018. Written informed consent was obtained from the patients to use and publish their data in this study.

### 2.2. Inclusion criteria

The existing study included patients aged above 16 years with RB suspected and those with past hemorrhoid surgery and repeated RB to be hemorrhoids.

### 2.3. Exclusion criteria

Patients who were unable to undergo a complete colonoscopy, those suspected of experiencing upper GIB with symptoms such as hematemesis or melena, and individuals with coffee-ground material or bright red blood in their gastric aspirates were excluded from the study.

### 2.4. Management procedure

All patients were hemodynamically stable and prepared for colonoscopy after standard colon cleaning with polyethylene glycol solution (Movicol or Colo Clean). The patients underwent a digital rectal examination (DRE) and a colonoscopy procedure performed with Olympus Extra II endoscopes. During the procedures, biopsies were obtained from cases displaying

abnormal findings and subsequently sent for histopathological analysis.

### 2.5. Data analysis

The analysis was conducted using SPSS version 22. Quantitative variables like weight, symptoms, age, gender, and colonoscopic findings were analyzed using descriptive statistics. Quantitative analysis was conducted by Chi-square, and a P-value of <0.05 was considered a significant level.

## 3. Results

The present study included 80 consecutive patients who presented with RB. The patients had a mean age of 45.40±15.54 years, with an age range of 17 to 80 years. Males were slightly more than females, with the male-to-female ratio being 1.05:1 (Table 1). About 56.3% of the population had a hemorrhoid (normal colonoscopy), and the most common colonoscopic finding was a polyp which comprised 18.7%.

Other findings included colitis and proctitis (15%), solitary rectal ulcers (2.5%), colorectal carcinoma (2.5%), diverticula, and fissures (2.5%) (Table 1). Colonoscopic findings showed no significant correlation with gender, age, body mass index, and smoking (p-values >0.05) (Table 2).

**Table 1:** Baseline characteristics

Variables	No. (%)
No. of patients	80
Age (mean ±SD)	45.40±15.54
Age range	17-80
<45 years	44 (55.0)
>45 years	36 (45.0)
Sex	
Male	41 (51.3)
Female	39 (48.80)
Smoking	
Yes	18 (22.5)
No	62 (77.5)
Colonoscopic findings	
Hemorrhoid	45 (56.3)
Solitary rectal ulcer (SRUS)	2 (2.5)
Colorectal cancer (CRC)	2 (2.5)
Evidence of Proctitis, colitis	12 (15)
Diverticula	2 (2.5)
Polyp	15 (18.7)
Fissure	2 (2.5)

## 4. Discussion

LGIB is a commonly observed problem in general medical practice [6]. Hemorrhoidal disease is regarded as one of the most common pathologies of the anal area, and it has been supposed that those affected by hemorrhoids in the general population account for about 5% [9]. The result of the Osborn et al. study in the USA showed that RB, pain, and constipation are common symptoms of internal hemorrhoids [10].

colorectal mass. Inflammatory bowel disease could also be a cause of hemorrhoids [15]. Koning et al. performed a study on 290 patients with hemorrhoids by colonoscopy, and inflammatory bowel disease was observed in 8 of the cases (2.80%) [15], while in our study evidence of colitis and proctitis was reported in 12 cases (15%). The higher occurrence in our sample may be explained by a delayed presentation. Diverticular

**Table 2.** The relationship between Colonoscopic Findings with age, gender, BMI, and smoking

Variables	AGE				GENDER				BMI			SMOKING		P- value
	17-40 years No. (%)	41-60 years No. (%)	> 60 years No. (%)	P- value	Male No. (%)	Female No. (%)	P- value	Normal weight No. (%)	Overweight and Obese No. (%)	P-value	Yes No. (%)	No No. (%)		
Hemorrhoid	23 (71.8)	15 (46.9)	7 (43.7)	0.66	24 (58.4)	21 (53.8)	0.4	22 (55)	23(57.5)	0.7	11 (61.1)	34 (55)	0.8	
Solitary rectal ulcer (SRS)	0 (0.0)	2 (6.3)	0 (0.0)		0 (0.0)	2 (5.1)		1 (2.5)	1 (2.5)		0 (0.0)	2 (3.2)		
Colorectal mass (malignancy)	0 (0.0)	0 (0.0)	2 (12.5)		1 (2.4)	1 (2.6)		2 (5.0)	0 (0.0)		1 (5.6)	1 (1.6)		
Evidence of Proctitis, colitis	5 (15.6)	6 (18.8)	1 (6.3)		6 (14.9)	6 (15.4)		7 (17.5)	5 (12.5)		2 (11.1)	10 (16.1)		
Diverticula	0 (0.0)	0 (0.0)	2 (12.5)		1 (2.4)	1 (2.6)		0 (0.0)	2 (5.0)		0 (0.0)	2 (3.2)		
Polyp	2 (6.3)	9 (28)	4 (25.0)		9 (21.9)	6 (15.4)		7 (17.5)	8 (20.0)		4 (22.2)	11 (17.7)		
Fissure	2 (6.3)	0 (0.0)	0 (0.0)		0 (0.0)	2 (5.1)		1 (2.5)	1 (2.5)		0 (0.0)	2 (3.2)		

Hemorrhoids often cause RB during bowel movements, which is typically described by patients as blood dripping into the toilet bowl. The blood is usually bright red because hemorrhoidal tissue has direct connections with arteries and veins [11]. Anemia and positive findings in FIT and FOB should not be solely attributed to hemorrhoids until a comprehensive colon evaluation is performed. This is especially important when the bleeding appears atypical for hemorrhoids, and when no bleeding source is identified during anorectal examination, or when the patient is at risk for colorectal neoplasia [12].

According to the literature, there is a controversy regarding gender predilection among patients with hemorrhoids. Peery et al. reported gender predilection toward males (60%) in their study [13], whereas females were predominant at 55% in Koning et al. [14]. The current study was contrary to the previous ones, as the distribution was nearly equal. However, the mean age of the patients in the existing study was fairly lower than in a previous study [15]. In our study, 35 patients (43.7%) were diagnosed with a colonoscopic finding other than an internal hemorrhoid. In Zia et al.'s study, the occurrence of malignancy was 10%, which is one of the other findings of RB [6]. However, in the current study, 2.5% of the patients appeared to have

disease is another finding that could be observed during a colonoscopic procedure. It is one of the most prevalent causes of massive GIB [16]. Some authors reported diverticula as the frequently associated finding with hemorrhoids; the association is potentially increasing with age [15]. In the current study, diverticula disease was diagnosed in only 2 cases (2.5%), and this can be explained by the fact that the mean age of our population compared to other studies is low. Polyps with hemorrhoids as a co-incidental finding have been reported varying in the literature. According to the data collected by Koning et al. during the 17 years of their experience in colonoscopy and sigmoidoscopy, 361 cases had polyps, which constituted 35% of the patients [14], while in the present study, the polyp was seen in 15 cases (8%). According to an anecdotal report, almost all peri-anal problems have presented lately, including hemorrhoids, because of social and cultural factors. A fissure-in-ano, which is a tear in the anal mucosa below the dentate line with a sentinel tag seen on perianal inspection, could be co-incidentally found in cases of hemorrhoids [17]. Alyouzbaki et al. found anal fissures in 10 patients out of a total of 185 patients [18]. In our study, a fissure-in-ano was observed in 2.5% of the patients. Despite the fact that a colonoscopy could be diagnostic for hemorrhoids, it can also be helpful in the diagnosis of other associated abnormalities and the referral to

proper therapeutic modalities. The small sample size because most patients with RB are managed without prior colonoscopy in our locality and the absence of comparative groups are the major drawbacks of this study.

## 5. Conclusion

This study examined the colonoscopic findings in patients who experienced RB and were suspected to have internal hemorrhoids. RB can be caused by several factors other than hemorrhoids, so a colonoscopy is a necessary tool for a proper diagnosis.

## Declarations

**Conflicts of interest:** The author(s) have no conflicts of interest to disclose.

**Ethical approval:** was obtained from the ethical committee of the University of Sulaimani.

**Patient consent** (participation and publication): Written informed consent was obtained from the patient for participation in the present study and the publication of the study along with any accompanying images.

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**Authors' contributions:** HRA was a major contributor to the conception of the study, as well as to the literature search for related studies. HOA, REA, and IJH were involved in the literature review, the writing of the manuscript, and data analysis and interpretation. HIF and MS Literature review, final approval of the manuscript, and processing of the tables. DTG, KFHH, DAI, DHSA, OHGH, and HHKA were involved in the literature review, the design of the study, and the critical revision of the manuscript. HRA and HOA Confirmation of the authenticity of all the raw data. All authors approved the final version of the manuscript.

**Use of AI:** AI was not used in the drafting of the manuscript, the production of graphical elements, or the collection and analysis of data.

**Data availability statement:** Not applicable.

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