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Contribution of Lower Digestive Endoscopy to the Diagnosis of Hematochezia: A Report of 811 Cases at the General Hospital Idrissa Pouye (Dakar, Senegal)

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Abstract

Introduction: Haematochezia is defined as the emission of red blood from the anus. It most often reflects lower digestive haemorrhage (LDH), *i.e.*, bleeding originating downstream of Treitz's angle. Nowadays, with improved techniques for exploring the small intestine (video capsule, enteroscopy), some authors consider HDB to be bleeding originating downstream of Bauhin's valve. In sub-Saharan Africa, particularly Senegal, the available data on lower digestive haemorrhage and its aetiologies are patchy, segmental and few in number. The aim of our study was to determine the contribution of lower digestive endoscopy to the diagnosis of haematochezia. **Methodology:** This was a retrospective descriptive and analytical study carried out between January 2015 and December 2022 in the digestive endoscopy centre of the Idrissa Pouye General Hospital. We collated all rectosigmoidoscopy and colonoscopy reports for which the indication was haematochezia. We excluded reports with incomplete data concerning patient age, sex or endoscopic examination results. The data were entered and analysed using Sphinx version 5.1.0.2 and SPSS (Statistical Package for Social Sciences) version 18. Cross-tabulations were used for the analytical study. To compare frequencies, we used Pearson's Chi-square test or Fisher's two-tailed exact test, depending on their applicability. Means were compared using the analysis of variance test with a significance threshold of $p < 0.05$. **Results:** The endoscopic prevalence of haematochezia was 36%. The mean age was 47 years, with extremes ranging from 1 to 92 years. The sex ratio was 1.74 (515 men). Haematochezia was mainly associated with consti-

pation (33.6%), proctalgia (21.7%), diarrhoea (13.6%), and a change in general condition (11.3%). 88 patients (10.8%) had normal endoscopy. One or more lesions were found in 723 patients (89.2%). The main lesions found were related to haemorrhoidal disease (47.6%), polyps (10%), neoplastic lesions (9.5%), diverticulosis (8.3%), haemorrhagic rectocolitis (4.2%), solitary rectal ulcer (2.5%), angiodysplasia (1.2%), Crohn's disease (1%), radiation rectitis (0.7%) and ischaemic colitis (0.4%). Neoplastic lesions. Squamous cell carcinoma was the histological type in all cases of anal cancer, and adenocarcinoma accounted for 91.6% of colorectal neoplasia. **Conclusion:** Haematochezia has a variety of aetiologies, most of which can be diagnosed using lower digestive endoscopy. At the HOGIP digestive endoscopy centre, HDB mainly affects young adults, with a predominance of men. Haemorrhoidal disease and tumour lesions are the main causes.

Keywords

Lower Gastrointestinal Bleeding, Digestive Endoscopy, Idrissa Pouye General Hospital

1. Introduction

Haematochezia is the emission of red blood from the anus. In the majority of cases, it is the result of a lower digestive haemorrhage. The latter is defined as bleeding originating downstream of the duodenojejunal angle or Treitz angle. Today, with the improvement in techniques for exploring the small intestine (capsule endoscopy, enteroscopy), some authors consider lower GI haemorrhage to be bleeding originating below Bauhin's valve [1]-[3]. Haematochezia is frequently encountered in clinical practice, with an estimated prevalence of between 9% and 38% in the general population [3] [4]. It is an alarming symptom that can lead to significant morbidity and mortality. Its aetiologies are diverse, requiring a rigorous diagnostic approach to identify them.

Digestive endoscopy plays a central role in the aetiological diagnosis of haematochezia. It enables the colorectal mucosa to be explored and biopsies to be taken. It also has therapeutic value in certain situations.

In sub-Saharan Africa, particularly Senegal, the data available on haematochezia and its aetiologies are rare and limited [5]-[7]. Indeed, only two studies on rectal bleeding have been published in Senegal so far, and they date back more than 10 years.

It is in this context that we conducted this study to determine the contribution of digestive endoscopy to the diagnosis of haematochezia.

2. Methodology

This was a retrospective, descriptive and analytical study conducted over a period of 8 years (1st January 2015 to 31st December 2022) in the gastroenterology de-

partment of the Idrissa Pouye General Hospital.

Reports from patients who underwent lower GI endoscopy to investigate haematochezia were collated.

Reports with incomplete data concerning patient age, sex or the results of the endoscopic examination were excluded.

On a pre-established form, we collected data concerning age, sex, indications for the examination, results of the diagnostic and therapeutic endoscopy and the anatomopathological reports of the biopsies performed.

The data were entered and analysed using Sphinx software version 5.1.0.2 and SPSS (Statistical Package for Social Sciences) version 18.

Cross-tabulations were used for the analytical study. To compare frequencies, we used Pearson's Chi-square test or Fisher's two-tailed exact test, depending on their applicability. Means were compared using the analysis of variance test with a significance threshold of $p < 0.05$.

3. Results

During the study period, 2312 lower gastrointestinal endoscopies were performed, including 1112 rectosigmoidoscopies and 1200 colonoscopies. Haematochezia was the indication for lower gastrointestinal endoscopy in 833 cases, representing an endoscopic prevalence of 36%. Twenty-two reports were excluded due to incomplete data. The results are derived from the analysis of 811 lower digestive endoscopy reports.

The mean age of the patients was 47 years, with a standard deviation of 18.39 years and extremes ranging from 1 to 92 years. Patients under the age of 40 accounted for 37% of the sample. There were 515 men (63.5%), with a sex ratio of 1.74.

Figure 1 shows the distribution of patients by age group.

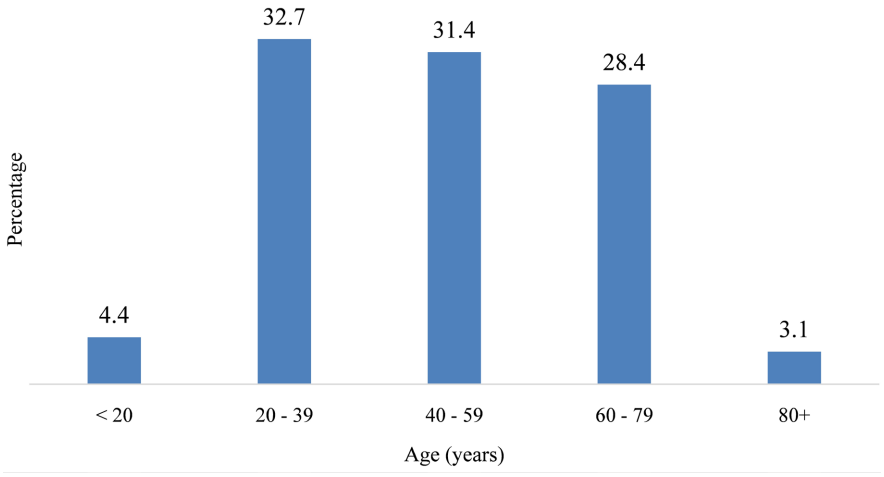

Figure 1. Distribution of patients by age group.

Various functional and general signs were associated with hematochezia.

Constipation was the most frequent symptom, present in 33.6% of cases, followed by proctalgia in 33.6% and diarrhea in 13.6%. General health deterioration was observed in 11.3% of cases. Figure 2 shows the frequency of associated signs.

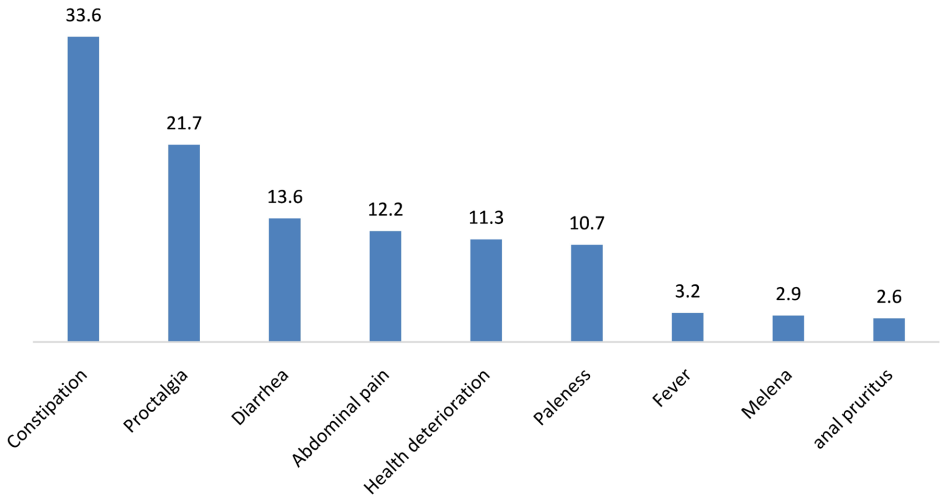

Figure 2. Distribution of patients by associated signs.

The proctological examination, followed by lower digestive endoscopy, revealed one or more lesions potentially responsible for the bleeding in 723 cases (89.1%). The examination was normal in 88 patients (10.9%). We present the results of anoscopy and lower digestive endoscopy in Table 1.

Table 1. Results of lower digestive endoscopies.

Results	Number of patients (n)	Percentage (%)
Normal	88	10.8
Hemorrhoidal disease	386	47.6
Anal fissure	57	7
Crohn's disease	11	1
Ulcerative colitis	34	4.2
Radiation proctitis	6	0.7
Neoplastic-like lesion	77	9.5
Polyps	81	10
Diverticula	67	8.3
Solitary rectal ulcer	20	2.5
Angiodysplasia	10	1.2
Ischemic colitis	3	0.4

Three hundred eighty-six (47.6%) patients had hemorrhoidal disease. Of these, 258 were men (66.7%), resulting in a sex ratio of 2. The average age was 47 years, with extremes ranging from 17 to 92 years. Grade II of the Goligher classification

was the most common.

Colorectal cancer appearance was observed in 71 patients. Among them, 47 (61%) were men, with a sex ratio of 1.57. The average age was 52 years. The lesions were in the rectosigmoid region in 59.8% of cases. Histopathological examination of the biopsies revealed adenocarcinoma in 91.6% of cases.

In the analytical phase, it was observed that etiologies varied with age. Hemorrhoidal disease, anal fissure, and Crohn's disease were more common in patients under 50 years old. For patients over 50, diverticulosis and tumor lesions (such as polyps and neoplastic lesions) were significantly more frequent.

In univariate analysis, there was a statistically significant association between colonic diverticulosis and age > 50 years, as well as between anal fissure and age < 50 years. Table 2 shows the distribution of patients by age and pathology.

Table 2. Distribution of patients by age and pathology.

Type of lesion		Age		p-value
		<50 years	>50 years	
Neoplastic-like lesion	Number of patients	30	47	0.014
	Percentage	39.0%	61.0%	
Hemorrhoidal disease	Number of patients	207	179	0.989
	Percentage	53.6%	46.4%	
Anal fissure	Number of patients	47	10	0.000
	Percentage	82.5%	17.5%	
Solitary rectum ulcer	Number of patients	11	9	0.805
	Percentage	55.0%	45.0%	
Radiation proctitis	Number of patients	2	4	0.301
	Percentage	33.3%	66.7%	
Ischemic colitis	Number of patients	2	1	0.534
	Percentage	66.7%	33.3%	
Angiodysplasia	Number of patients	7	3	0.210
	Percentage	70.0%	30.0%	
Polyps	Number of patients	31	50	0.008
	Percentage	38.3%	61.7%	
Diverticula	Number of patients	11	56	0.000
	Percentage	16.4%	83.6%	
Ulcerative colitis	Number of patients	19	11	0.217
	Percentage	63.3%	36.7%	
Crohn's disease	Number of patients	9	2	0.048
	Percentage	81.8%	18.2%	

4. Discussion

The endoscopic prevalence of hematochezia in our study was 36%. Comparable

data have been reported in other series from both Africa and the West, where it ranged from 23% to 38.7% [8]-[11]. Hematochezia is a frequent reason for consultation and one of the main indications for lower digestive endoscopy worldwide. The mean age of patients was 47 years [range: 1 to 92 years]. Similar results were reported by Okon *et al.* in Côte d'Ivoire [10]. A higher mean age was reported in the Asian and American series [12] [13]. Due to its rapid population growth, the African continent has a very young population, with individuals under 45 years old accounting for nearly 80% of the population. Thus, this age difference between geographical areas impacts the mean age of patients and the etiologies of hematochezia.

Associated symptoms included constipation in 33.6% of cases, followed by proctalgia in 21.7%, and general state alteration in 11.3%. The retrospective nature of our study was a limitation, particularly in data collection and symptom description. The indications for lower digestive endoscopy mentioned in the reports often did not provide enough information about the semiological characteristics of hematochezia or the physical examination findings. It is important, in cases of hematochezia, to identify and characterize the associated signs, which are highly variable and can be extremely helpful in guiding the etiological diagnosis.

Endoscopy was normal in 88 patients (10.8%). This result was comparable to literature data, where the normal endoscopy rate varied from 9% to 23% in various series [14]-[16]. Several factors could explain these normal endoscopy rates, including the delay in performing the endoscopy and difficulties in exploring the small intestine in our context.

Cancer was found in 77 patients (9.5%), with 66 (86%) having adenocarcinoma. The average age of patients with cancer was 52 years. These data are consistent with those reported in Africa, where the average age of occurrence ranged from 45 to 54 years [17] [18]. In the West, the average age of diagnosis is around 60 years [19]. This age difference could be related to genetic and environmental factors that are not yet fully understood. Multicenter studies with molecular research will be necessary in Africa to clarify the factors explaining the relatively early occurrence of colorectal cancer.

There seems to be a correlation between age and certain etiologies of LGIB. Indeed, anal fissure was statistically significantly associated with age < 50 years, while colonic diverticulosis was linked to age > 50 years. Several series from Africa and the West show a higher prevalence of anal fissure in young subjects [20]-[22]. Anal fissures are more frequent in young adults because they typically have higher sphincter tone, which can result in stronger anal sphincter contractions. These contractions may cause tears in the anal skin during the passage of hard or large stools. In contrast, older adults have reduced sphincter tone, which lowers the risk of anal fissures.

As for colonic diverticulosis, its higher prevalence in older individuals is reported by several authors [23]-[25]. Multiple factors explain why diverticulosis is much more common in older people, including the weakening of the colonic wall

with age, increased intracavitary pressure due to years of repetitive muscle contractions in the colon, and dietary habits, such as fiber-poor diets commonly seen in older individuals, which can lead to chronic constipation.

5. Conclusion

Hematochezia has diverse etiologies, most of which can be diagnosed through lower digestive endoscopy. At the endoscopy center at HOGIP, it predominantly affects young adults, with a male predominance. Hemorrhoidal disease and tumor lesions are the leading causes.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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