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Research Article

Clinical, Endoscopic, Histological, and Therapeutic Aspects of Gastric Polyps at the Sikasso Regional Hospital, Mali: A Study of 39 Cases

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Abstract

Introduction: Gastric polyps are tissue lesions that develop within the gastric lumen. Their clinical, endoscopic, histopathological, and therapeutic features remain variable and poorly described in sub-Saharan Africa. This study aimed to characterize these aspects in patients at Sikasso Regional Hospital, Mali. Methods: We conducted a retrospective study over an eight-year period (2017–2024) including all histologically confirmed gastric polyps. Data were collected from medical records and analyzed using Microsoft Excel. Results: A total of 39 patients were included (24 men, 15 women; sex ratio 1.6), with a mean age of 52 years (range: 15–87). Polyps were sessile in 71% and pedunculated in 29% of cases. Lesions were single in 51% and multiple in 49%, most frequently located in the antrum. The mean polyp size was 6.2 mm (range: 2–29 mm). Histologically, hyperplastic polyps were observed in 30.8%, adenomatous in 23.7%, fibro-inflammatory in 15.4%, juvenile in 12.8%, fundic gland in 12.8%, and papillomatous in 10.3%. *Helicobacter pylori* infection was present in 35.9% of cases, with 15.4% showing associated gastritis. Mean follow-up duration of patients was 31 months. Conclusion: This study provided valuable insights into gastric polyps in the population of Sikasso, highlighting the diversity of their clinical and endoscopic characteristics. *Helicobacter pylori* infection remains endemic in this setting and is often chronic, frequently evolving asymptomatically while potentially leading to significant gastric lesions. These findings emphasize the importance of strengthening preventive strategies, including public awareness on screening, early management, and regular surveillance of patients with gastric polyps.

Keywords

Gastric Polyps, Clinical Features, Endoscopy, Histopathology, Mali

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1. Introduction

Gastric polyps (GPs) are tissue lesions that develop within the gastric lumen. The diagnosis of gastric polyps relies primarily on upper gastrointestinal endoscopy combined with biopsy sampling. In recent years, significant advances have been made in the field of gastric biopsy techniques, allowing a more accurate diagnosis and characterization of gastric polyps. In 2019, Wu et al. developed an artificial intelligence system capable of detecting these lesions with a sensitivity of 94%, a specificity of 91%, and an overall accuracy of 92.5%. These performances exceed those of endoscopists, including experienced specialists. [1].

Gastric polyps are relatively uncommon lesions, with a reported prevalence ranging from 1% to 6.4% among diagnostic upper gastrointestinal endoscopies [2, 3]. The mean age at diagnosis is typically between 56 and 65 years, with a predominance among women [4, 5]. In more than half of the cases, multiple gastric polyps are observed; however, the coexistence of different histological types of gastric polyps remains rare [5].

The epidemiology of gastric polyps (GPs) is closely related to the prevalence of *Helicobacter pylori* (H. pylori) infection. Indeed, the presence of *H. pylori* is considered a risk factor for certain types of polyps, particularly hyperplastic polyps, while it appears to have a protective effect against others, such as fundic gland polyps. In France, precise data on the prevalence of *H. pylori* infection remain limited; however, it is estimated to range between 15% and 50% of the population [6, 7], and was reported to be 41% in a recent study conducted in Nantes [8].

The vast majority of gastric polyps (more than 85%) are benign. The risk of malignancy or malignant transformation largely depends on the histological type of the polyp, with adenomas carrying the highest risk. Several classifications of gastric polyps have been proposed [9]; however, for practical purposes, some authors distinguish between non-neoplastic and neoplastic polyps. Because biopsy sampling of gastric polyps may be insufficient and given their potential neoplastic risk, the British Society of Gastroenterology (BSG) recommends endoscopic resection of hyperplastic polyps when they are symptomatic or show evidence of dysplasia [10]. When one or more hyperplastic polyps are identified during gastroscopy, a follow-up endoscopy is recommended after one year [11] in the following situations:

1) when biopsies are positive for *Helicobacter pylori* infection after eradication therapy;
2) when residual polyps persist following *Helicobacter pylori* eradication;
3) and after the resection of dysplastic or symptomatic polyps.

In the Sikasso region, a substantial number of patients report excessive use of proton pump inhibitors (PPIs), which may justify the performance of upper gastrointestinal endoscopy with biopsy sampling when necessary in order to allow histological evaluation. This situation is further compounded by the high prevalence of *Helicobacter pylori* infection in our setting. This infection is often chronic and frequently asymptomatic, yet it may lead to significant gastric lesions in some cases. In addition, the region faces a limited technical infrastructure and a shortage of qualified endoscopists. In this context, we conducted this study the first of its kind in the region with the primary objective of describing the clinical, endoscopic, histological, and therapeutic characteristics of gastric polyps.

2. Methods

2.1. Study Setting

This study was conducted in the Hepato-Gastroenterology Department of the Regional Hospital of Sikasso. The health system in Mali is organized into three levels of reference**:** district hospitals or reference health centers (CSRef) constitute the first level, regional hospitals represent the second level, and university teaching hospitals (CHU) represent the third level of refrence.

2.2. Study Design and Period

This was a retrospective study conducted in 2025 and covering data from 2017 to 2024.

2.3. Study Population

The study population consisted of the medical records of patients admitted to the Hepato-Gastroenterology Department of Sikasso Regional Hospital.

2.3.1. Inclusion Criteria

The study included all complete medical records of patients diagnosed with gastric polyps confirmed by histopathology during the study period, who were managed in the Hepato-Gastroenterology Department of Sikasso Regional Hospital.

2.3.2. Exclusion Criteria

Exclusion criteria comprised patients with gastric polyps diagnosed outside the study period, polyps not confirmed by histopathology during the study period, and other gastric pathologies identified during the study period.

2.3.3. Sampling

All cases meeting the inclusion criteria were consecutively included in the study. No formal sample size calculation was performed.

2.4. Patient Management Procedure

All patients underwent examination under locoregional anesthesia using a 2% viscous lidocaine gel, applied three minutes prior to the procedure. Once visualized, the gastric polyps were completely resected using biopsy forceps, either in a single session or multiple passes, and immediately placed in a vial containing 1 ml of 10% formalin. Each vial was labeled with the number of samples collected and their anatomical location before being sent to the pathology laboratory. Histopathological results were typically received approximately two weeks later.

Due to limited technical resources and to prevent potential progression of lesions to cellular degeneration, polypectomy was performed exclusively using biopsy forceps.

The therapeutic management primarily involved complete polyp resection. Patients received systemic proton pump inhibitors (PPIs) for three days, followed by an oral maintenance regimen. Additionally, patients were provided with counseling regarding lifestyle modifications, post-procedure care, and scheduled follow-up to monitor recovery and assess for potential recurrence.

2.5. Data Collection and Sources

Data were collected from consultation registers, medical records, and histopathology reports of the specimens obtained. All information was recorded on a standardized individual data collection form. The form captured demographic, clinical, endoscopic, and histopathological variables.

2.6. Data Analysis

The collected data were entered and analyzed using Microsoft Excel. Qualitative variables were summarized as frequencies and percentages, while quantitative variables were presented as means with their standard deviations.

3. Results

3.1. Demographic Characteristics

A total of 39 patients were included, comprising 61.5% men (n=24) and 38.6% women (n=15). The male/female sex ratio was 1.6. The mean age was 52 years, ranging from 15 to 87 years. The mean age was 52 years (range: 15–87).

3.2. Circumstances of Discovery

The circumstances of discovery were marked by epigastralgia (38.5%), anemia (28.2%), digestive hemorrhages (2.5%). In 30.8% of cases, gastric polyps were incidentally discovered (Figure 1).

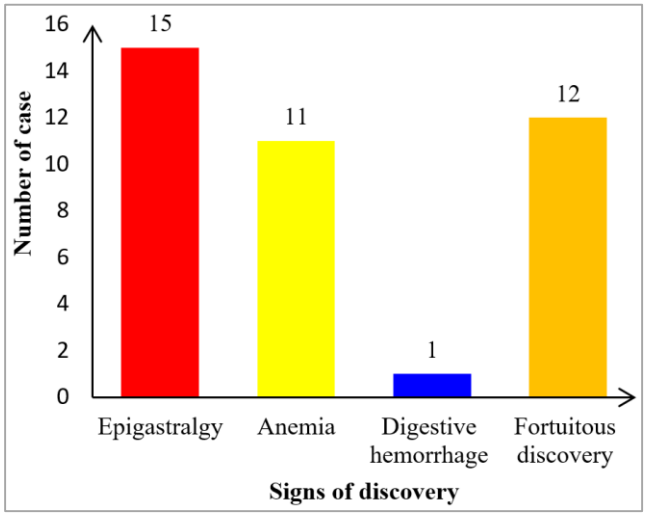

Figure 1. *Distribution of patients according to signs of discovery of polyps.*

3.3. Endoscopic Results

Endoscopic examination revealed that 71% of gastric polyps were sessile, while 29% were pedunculated (Figure 2).

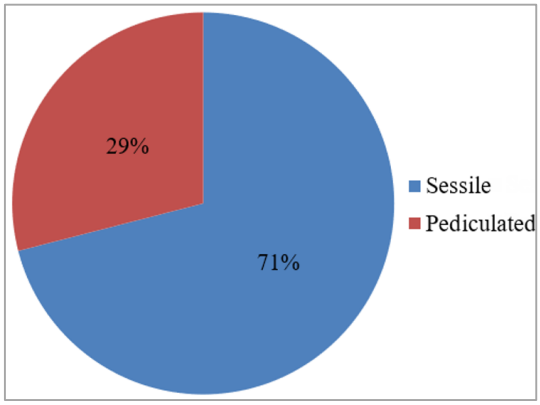

Figure 2. *Distribution of patients according to the endoscopic appearance of gastric polyps.*

3.4. Histological Findings

Histological analysis showed that gastric polyps were hyperplastic in 30.76% of cases, adenomatous in 23.07%, fibro-inflammatory in 15.38%, juvenile and fundic polyps in 12.82% each, and papillomatous in 10.25% (Table 1). The lesion was solitary in 51% of patients, with the most frequent location being the antrum. The mean polyp size was 6.24 mm, ranging from 2 to 29 mm. No cases of associated gastric neoplasia were observed. *Helicobacter pylori* (HP)-positive gastritis was associated with gastric polyps in 15.38% of cases, while HP positivity was detected in 35.89% of patients (Table 1).

Table 1. *Distribution of patients according to the histological type of gastric polyps (n=39).*

Histological Type of Gastric Polyps	Frequency (n)	Percentage (%)
Hyperplastic	12	30.76
Adenomatous	9	23.07
Fibro-inflammatory	6	15.38
Juvenile	5	12.82
Fundic	5	12.82
Papillomatous	4	10.25
Total	39	100

3.5. Treatment

In addition to biopsy sampling, patients received proton pump inhibitors (PPIs) and gastric mucosal protective agents. Blood transfusion was administered in cases of poorly tolerated anemia. Patients diagnosed with *Helicobacter pylori* infection were treated with an oral eradication regimen for 10 days consisting of omeprazole 20 mg every 12 hours, clarithromycin 500 mg every 12 hours, amoxicillin 1 g every 12 hours, and metronidazole 500 mg every 12 hours. Regular follow-up was performed after endoscopic evaluation.

3.6. Patient Follow-up and Outcomes

The mean follow-up duration of patients was 31 months. A recurrence of polyps was observed in 5 patients among them 18.51% had no histological modification.

4. Discussion

This study, aimed at describing the clinical, endoscopic, histological, and therapeutic characteristics of gastric polyps, represents the first of its kind conducted in the Sikasso region. The majority of gastric polyps identified were benign.

Gastric polyps are most commonly hyperplastic, with malignant transformation occurring in approximately 2% of cases. Adenomatous polyps, although less frequent, are more prone to malignant degeneration [12]. Despite the relatively low rate of malignant transformation in gastric polyps, it is important to recognize that the risk persists. Therefore, such lesions should not be overlooked and must be completely removed following histological confirmation, within the framework of rigorous endoscopic surveillance combined with histopathological evaluation.

The mean age of our patients was 52 years, ranging from 15 to 87 years. This finding is similar to that reported by F. Cherrafi [13], who found 12.5% of patients aged 60–64 years, with a mean age of 40 years and extremes of 2 and 80 years. A similar trend has been observed in studies conducted by Bassene ML et al. [14]. This may be explained by the fact that the diagnosis of polyps is often delayed. In our study, there was a male predominance, accounting for 61.53% of cases, which is consistent with reports in the literature [13, 14]. Gastric polyps were associated with gastritis in 15.38% of cases and with *Helicobacter pylori* infection in 35.89% of cases. The high proportion of gastric polyps associated with *H. pylori* infection in our context may be explained by the endemic nature of this infection, which can occur from childhood and remain asymptomatic. This finding is similar to that reported by Bassene et al. in Dakar, where chronic atrophic gastritis (10.8%) was the main histological lesion associated with polyps, and *H. pylori* was detected in 17 patients (45.9%) [14].

Sessile polyps were predominantly observed in 71% of cases in our study, compared with 74% reported by Cherrafi F in a study conducted in Morocco [13]. Histological examination revealed hyperplasia in 30.76% of polyps and adenomatous changes in 17.94% of cases. These results are comparable to findings from Dakar, where hyperplastic and adenomatous polyps predominated [14]. Similarly, Cherrafi F in Morocco (2020) reported 85% hyperplastic polyps and 10% adenomatous polyps.

In our series, most patients had fewer than three polyps, with polyps being solitary in 11 cases. This differs from the study by Bassene et al. in Dakar, where the majority of patients had solitary polyps (51%), sessile in 71 cases (83.8%), and pedunculated in 7.69% of cases [14].

The progression of these lesions over time exposes patients to the risk of malignant transformation, particularly in adenomas, highlighting the importance of early diagnosis. In our study, the mean follow-up duration was 31 months. Polyp recurrence was observed in five patients, among whom 18.51% showed no histological changes. Gastric polyps represent a significant public health concern in our regions, where they are frequently associated with gastritis and endemic, chronic *Helicobacter pylori* infection, which often originates in childhood and remains asymptomatic in the majority of cases. Long-term use of proton pump inhibitors of various origins also plays a significant role among the contributing factors.

Given the potential for malignant transformation over time, especially in adenomatous polyps, early detection is crucial. This situation necessitates rigorous endoscopic follow-up and surveillance in patients with confirmed gastric adenomas, with the aim of detecting neoplasia at its earliest stage.

5. Conclusion

This study provided a comprehensive understanding of the clinical, endoscopic, and histological characteristics of gastric polyps in the population of Sikasso. Endoscopic examination revealed a predominance of sessile polyps, while histological analysis showed that hyperplastic, adenomatous, and fibro-inflammatory types were the most common. *Helicobacter pylori* infection remains endemic and often chronic in this region. These findings underscore the need to emphasize preventive strategies,

including public awareness, early detection, prompt management, and regular surveillance of patients with gastric polyps.

Abbreviations

GPs	Gastric Polyps
HP	*Helicobacter Pylori*
PPI	Proton Pump Inhibitor
BSG	British Society of Gastroenterology
GC	Gastric Cancer

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Author Contributions

Oumar Traore: Conceptualization, Validation, Visualization, Writing – original draft

Abdoul Salam Diarra: Methodology, Formal Analysis, Validation, Visualization, Writing – review & editing

Madou Traore: Supervision

Kalba Peliaba: Validation, Visualization

Mohamed Diarra: Validation, Visualization

Dramane Toure: Validation

Oumar Sangho: Supervision, Validation

Data Availability Statement

The data generated or analyzed during this study are not publicly available; however, they can be obtained from the corresponding authors upon reasonable request.

Conflicts of Interest

The authors declare no conflicts of interest.

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