

Study of Upper Endoscopic Lesions at the Digestive Endoscopy Unit of the Gabriel Touré University Hospital

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Abstract

Introduction: Upper gastrointestinal endoscopy is a technique used to explore the upper digestive tract for diagnostic or therapeutic purposes, during which upper gastrointestinal lesions are frequently encountered. **Objective:** To study upper endoscopic lesions in the endoscopy unit of the Hepatogastroenterology Department at Gabriel Touré University Hospital. **Patients and Methods:** This was a prospective, cross-sectional, observational study conducted from January to June 2024 in the endoscopy unit of the Hepatogastroenterology Department at Gabriel Touré University Hospital. All patients who underwent gastrointestinal endoscopy and provided their consent were included. **Results:** During the study period, 673 endoscopies were performed, of which 591 were upper endoscopies, representing a frequency of 87.82%. The 45 and over age group was the largest, representing 49.9% of patients; females were the most represented sex at 52%. A significant proportion of patients resided outside Bamako (25.2%). The majority of endoscopies were performed for diagnostic purposes (99.7%). Gastric lesions predominated in 90.7% of cases, with epigastric pain (45.5%) being the main indication, followed by the search for signs of portal hypertension (19%). An endoscopic abnormality was detected in 95.4% of patients. Esophageal varices (47.5%) and peptic esophagitis (28.8%) were the most frequent esophageal lesions. Antral gastropathies (29.7%) and erythematous pangastropathies (21.2%) were the most common gastric disorders. The suspected presence of gastric tumors was 2.9%. **Conclusion:** This study highlights the high frequency of gastric pathologies requiring upper endoscopic examination.

Keywords

Upper Endoscopic Lesions, Gabriel Touré University Hospital, Endoscopy Unit

1. Introduction

Esophagogastroduodenoscopy (EGD) is a technique for examining a body cavity or duct, such as the digestive tract, using a tube equipped with lighting, an optical system, and sometimes a small camera. This endoscope is inserted through natural openings or a small incision. It allows visualization of the inside of the cavity or duct for examination, sampling, or treatment [1]. Thus, digestive endoscopy allows for the examination of the digestive tract, bile ducts, and pancreas. It can be performed on the upper part of the digestive tract, in which case it is called esophagogastroduodenoscopy (EGD), gastroscopy, or gastroscopy. It can be performed for both diagnostic and therapeutic purposes [2].

From a therapeutic standpoint, foreign bodies and polyps can be removed, strictures dilated, and sclerotherapy and thermocoagulation can be safely performed. These various techniques are widely practiced throughout the world, with varying levels of accessibility from continent to continent, country to country, and even region to region within the same country [3].

However, despite its increasing use today, its unpleasant and painful nature is sometimes reported by patients. Its tolerance and acceptability also vary among patients [4] [5]. In the United States in 2009, a study estimated that more than 6.9 million gastrointestinal endoscopies had been performed. Also in Europe, a 2016 study in the United Kingdom showed that more than 1.2 million gastrointestinal endoscopies (both diagnostic and therapeutic) had been performed [6]. In sub-Saharan Africa, upper gastrointestinal endoscopy is performed, but at varying rates depending on its availability [7]. At Gabriel Touré University Hospital, gastrointestinal endoscopy is performed regularly. To highlight the various common pathologies in our setting, we aimed to describe the common pathologies encountered in upper gastrointestinal endoscopy within the endoscopy unit of the Hepatology and Gastroenterology Department at Gabriel Touré University Hospital and to provide an activity report.

2. Patients and Methods

2.1. Study Setting and Location

Our study took place in the endoscopy unit of the Hepatology and Gastroenterology Department at Gabriel Touré University Hospital.

2.2. Study Type and Period

This was a prospective, cross-sectional observational study conducted from January to June 2024.

2.3. Target Population

Our study included all patients admitted for digestive endoscopy during the study period. These included hospitalized patients, outpatients, and patients referred from other healthcare facilities in Bamako; others came from other parts of the country or neighboring countries.

2.4. Inclusion Criteria

All patients who underwent digestive endoscopy and provided their consent were included in our study.

2.5. Exclusion Criteria

Patients who refused a digestive endoscopy.

2.6. Procedure

Patients were kept fasting for a minimum of 6 hours before the upper gastrointestinal endoscopy, and numerous and varied preparations were offered, centered on a low-residue diet.

The goal of the preparation was to obtain a digestive tract completely free of food debris. The equipment used consisted of gastroscopes (Olympus GIF-HQ190 and FUJIFILM Corporation) with a multidirectional probe offering axial vision. Local anesthesia was administered using viscous lidocaine oral gel.

2.7. Sample

The sample size was exhaustive (all patients meeting the inclusion criteria).

2.8. Data Collection

Data were collected using a pre-established individual questionnaire, taking into account the study objectives.

2.9. Data Entry and Analysis

Data were entered using Excel 2013 and Microsoft Office Word 2013 and then analyzed using SPSS Statistics 25.

2.10. Ethical Considerations

Patients were informed about the nature of the study. Verbal consent was obtained from patients, and data collection was conducted while respecting their anonymity and the confidentiality of their information.

3. Results

3.1. Frequency

During the study period, a total of 673 endoscopies were performed in our unit, including 591 upper endoscopies and 82 lower endoscopies, representing 87.82%

and 12.18% of all procedures, respectively.

3.2. Sociodemographic Aspects

Age range and sex:

The mean age of participants was 44.91 years \pm 4.6 years, with a range of 5 to 80 years. The 45 and over age group was the largest, representing 49.9%. Females were the most represented, at 52%, with a sex ratio of 0.91.

Socioprofessional activities and residence:

Housewives were the most represented group at 36.9%, followed by manual laborers at 13.5%, and farmers and civil servants at 11.5%.

A significant proportion of patients resided outside Bamako (25.2%), followed by residents of Commune VI (23.4%) and Commune V (17.3%).

3.3. Clinical and Paraclinical (Endoscopic) Aspects

Purpose of endoscopy:

The majority of endoscopies were performed for diagnostic purposes (99.7%).

Indications:

Epigastric pain (45.5%) was the main indication, followed by the investigation of signs of portal hypertension (19%) and vomiting (10.6%).

Endoscopic appearance:

An abnormality was detected in 95.4% of patients, confirming a high prevalence of gastrointestinal disorders requiring endoscopic examination.

Endoscopic lesions:

The lesions were located in the gastric region in 90.7% of cases.

Esophageal Lesions:

Esophageal varices (47.5%) and peptic esophagitis (28.8%) were the most frequent lesions (**Figure 1**).



Figure 1. VO grade III.

Gastric lesions:

Erythematous pangastropathy (21.2%) and erythematous antral gastropathy (18.5%) were the most common gastric lesions. Suspected gastric tumors were present in 2.9% of cases (**Figure 2**).

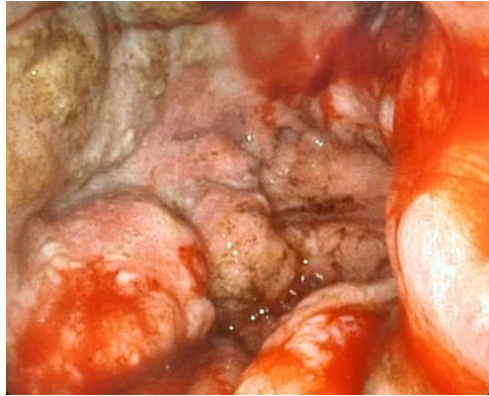


Figure 2. Large necrotic and hemorrhagic ulcerated and budding lesion.

Duodenal lesions:

Duodenal ulcer (45.8%) and duodenitis (37.5%) were the most frequently observed lesions.

Ulcer/Sex relationship:

Ulcers were significantly more common in men ($p = 0.021$), with a statistically significant correlation.

4. Comments and Discussion

4.1. Frequency of Endoscopies

During the study period, a total of 673 endoscopies were performed in our unit, including 591 upper endoscopies and 82 lower endoscopies. This represents 87.82% and 12.18% of all procedures, respectively. These results are similar to those reported by Traoré *et al.* in Mali in 2020, where upper endoscopy constituted approximately 85% of endoscopic examinations [8]. Similarly, a study conducted in Senegal by Diouf *et al.* in 2018 found a predominance of upper endoscopies at 82.5% [9]. These trends are also observed in Western countries, where upper endoscopy remains the most frequently prescribed endoscopic examination, although the indications differ slightly due to a higher prevalence of gastroesophageal reflux disease (GERD) in these regions [10].

4.2. Sociodemographic Profile of Patients

A quarter of the patients (25.2%) resided outside the capital, which is indeed a factor contributing to delays in diagnosis and treatment.

The mean age of the patients was 44.91 years \pm 4.6 years, with a range of 5 to 80 years. The most represented age group was 45 years and older, which is consistent with several studies conducted in sub-Saharan Africa. A study carried out in Côte d'Ivoire by Konan *et al.* in 2019 reported a predominance of patients over 40 years of age [11]. Regarding sex, we observed a slight female predominance (52%), consistent with the work of Sow *et al.* in Senegal in 2017, who reported a female proportion of 54% [12]. However, these results contrast with some European studies where male predominance is more pronounced in digestive endoscopic examinations,

which could be explained by socio-cultural factors influencing access to care [12].

4.3. Endoscopic Aspects

Indications for Endoscopy

Epigastric pain was the main indication (45.5%), followed by the search for signs of portal hypertension (19%). These results are comparable to those observed in Algeria by Bouziane *et al.* in 2018, who found rates of 47% and 21%, respectively [13]. It is interesting to note that in industrialized countries, the main indications also include monitoring precancerous lesions and screening for gastric cancer, particularly in at-risk populations [14].

Lesions on Upper Endoscopy

We found an endoscopic abnormality in 95.4% of cases. This high rate is close to the results reported by Diarra *et al.* in 2021 in Burkina Faso, where 92% of patients presented with a digestive pathology detectable by endoscopy [15]. Esophageal varices were present in 47.5% of patients. This rate is lower than that reported by S. Kodio in 2025 (91.3%) [16]. This could be explained by the high frequency of post-hepatitis B cirrhosis in our context [17]. The lesions were located in the stomach in 90.7% of cases. Antral gastropathies were the most frequent (29.7%), including erythematous antral gastropathies (18.5%) and erosive antral gastropathies (11.2%), followed by erythematous pangastropathies (21.2%), which is consistent with the 2020 study by Gaye *et al.* in Senegal, who found a prevalence of 29% for this pathology [18]. Comparison with Asian studies reveals a higher frequency of *Helicobacter pylori* infections associated with antral gastropathies, with a prevalence reaching 70% in Japan and South Korea, highlighting the importance of screening for and eradicating this bacterium in the prevention of gastric diseases [19] [20]. The suspected gastric tumor rate was 2.9%. This result is identical to that of Sanogo SD 2.8% in 2023 in Mali [21]. This observation highlights the need to establish standardized biopsy protocols for endoscopic examinations to ensure reliable histological diagnosis. Furthermore, it underscores the importance of implementing local clinical and endoscopic follow-up strategies for patients with suspicious lesions.

4.4. Relationship between Ulcer and Sex

We found a significant association between ulcer and male sex ($p = 0.021$). This observation is confirmed by the work of Koffi *et al.* (2019) in Côte d'Ivoire, who reported a higher prevalence of gastroduodenal ulcers in men (60%) [22]. Studies conducted in the United States have also shown that men have an increased risk of peptic ulcers, notably due to higher consumption of nonsteroidal anti-inflammatory drugs (NSAIDs) and alcohol [23] [24]. Furthermore, data related to risk factors were not collected in our study.

5. Conclusion

This study highlights a high frequency of gastrointestinal and anorectal patholo-

gies requiring endoscopic examination. The results highlight the relevance of these examinations in the diagnosis and monitoring of digestive and proctological conditions, with particular attention to malignant pathologies that require specialized and sometimes multidisciplinary care.

Conflicts of Interest

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

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