

Upper Gastrointestinal Endoscopy at University Hospital Souro Sanou Bobo-Dioulasso (Burkina Faso), about 1022 Cases: Signs and Lesions Observed

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Abstract

Upper gastrointestinal endoscopy is an excellent way for the diagnosis of high digestive pathology. We report the results of 1022 upper gastrointestinal endoscopy performed at Bobo-Dioulasso CHU-SS, in western Burkina Faso (West Africa). The aim of this study was to document the indications and lesions found in high endoscopy at the CHUSS. **Patients and Methods:** It was a cross-sectional study, prospective to describe the results of gastroscopy performed from 1st January 2015 to 30th June 2016 at the digestive endoscopy unit CHU-Souro Sanou Bobo-Dioulasso. **Results:** In the study period, 1022 upper gastrointestinal endoscopies were performed. The main indications were: The epigastric pain (48.6%), portal hypertension (10.7%) and gastroesophageal reflux disease (9.9%). The pathologies observed were dominated by gastropathies (48.11%), peptic ulcer (27%) and oesophageal varices (9.68%). Epigastralgiias were the main circumstance for the discovery of: 52.3% of esophagitis, 49.17% of gastropathies and 46.12% of peptic ulcers. Histopathologically, the results of the 236 biopsies were dominated by gastritis (88.56%), stomach cancers (7.63%) and esophagus (3.81%). **Conclusion:** The main indication of the UGIE at the CHU-Souro Sanou in Bobo-Dioulasso was epigastralgia. The pathologies observed were dominated by gastropathy, esophagitis and PUD.

Keywords

Upper Gastrointestinal Endoscopic, Indications, Lesions Observed, Bobo-Dioulasso

1. Introduction

The upper gastrointestinal endoscopy (UGIE) is a test that allows to visualize the interior of the esophagus, stomach, duodenum and the mucous membrane lining them. Morphological examination for the exploration of the upper digestive tract is performed in an aetiological purpose, or therapy.

Common practice in developed countries, is still a luxury in our countries with limited income. In fact, in our countries in the south of the Sahara, there is the problem of its technical, geographical and financial accessibility. In Africa, many studies have been made on the indications and results in endoscopy [1]-[15]. In Burkina Faso, no similar publication has yet appeared. It therefore seemed justified for us to report indications and results of 1022 endoscopies performed in 17 months in a hospital in resource-limited countries.

The purpose of this study was to document indications and lesions found in high endoscopic in CHUSS.

2. Patients and Methods

2.1. Type of Study, Population and Sampling

This was a cross-sectional, prospective, descriptive study carried out from 1st January 2015 to 30th June 2016 in the digestive endoscopy unit of the Hepato-Gastroenterology Department of the University Hospital Souro Sanou (CHU-SS) in Bobo-Dioulasso (Burkina Faso). The patients in the sample were included in the study as they arrived at the endoscopy unit. CHU-SS is the reference center of four health regions (Mouhoun, Cascades, Hauts Bassins and South-west) of the western half of Burkina whose population is estimated to 5,156,289 inhabitants [16] and 28.8% of the population of Burkina Faso. The protocol was approved by the hospital ethics committee of CHU-SS. Were included in this study all patients from both rural and urban areas who underwent upper gastrointestinal endoscopy during the study period.

2.2. Variables and Data Collection Technique

The data collected concerned the socio-demographic characteristics of the patients, the main indication and the result of UGIE. All reports of UGIE were included. Biopsies for histology were systematic in all lesions of gastritis and dysmitoses, and in each case for other injuries. No staining was done.

The various endoscopic examinations were performed in the endoscopy unit by a gastroenterologist assisted by an aide. The exploration technique was classic. The apparatus used was a brand video-endoscope STORZ 13821 PKS with a

multidirectional probe axially vision. All patients were previously submitted to a local anesthesia to viscous Xylocaine 2%. No general anesthesia was performed.

2.3. Data Processing and Analysis

The data collected was captured and analyzed using SPSS software version 20. Descriptive statistics were used to determine the average and standard deviations of the quantitative variables as well as the proportions of the various afflictions.

2.4. Operational Definitions

- Inflammatory lesions grouped the esophagitis (including esophageal ulcers), the gastropathies (gastritis) and duodenitis.
- The diagnosis of mycotic esophagitis was based on endoscopic lesions type *Candida albicans* [13].
- The term “dysmitose” means any suspicious new formation of malignancy in endoscopic.
- Gastro-esophageal reflux disease (GERD), consisted heartburn, regurgitations and retro-sternal pain [17].

3. Results

3.1. Demographic of Patients

In this study, 1022 patients were included. **Table 1** presents the socio-demographic characteristics of our sample. There were 552 women (54%) and 470 men (46%). The average age was 41.72[±15.59] years with extremes of 7 and 85 years. The median age was 40 and 75% had more than 53 years.

The stomach and duodenum were examined in respectively 1006 and 1000 patients due to non crossed esophageal stenosis (n = 16) and/or antrum-pyloric (n = 6).

3.2. Indications of an Upper Gastrointestinal Endoscopy (UGIE)

For the whole sample, the endoscopic examination was performed in almost half of cases (48.6 %) for epigastralgia. Then follow, the search for signs of portal hypertension (10.7%), gastroesophageal reflux disease (9.9%), gastrointestinal bleeding (8%) and dysphagia (4.4%). **Table 2** summarizes the various indications of the OGDE during our study.

3.3. The Lesions Observed in the Upper Gastrointestinal Endoscopy

Endoscopic Examination was abnormal in 86.7% (886) of our patients. Among them, more than the half (51.02%) were more than 40 years old.

The achievement was multi-organic with 358 (40.41%) patients. It was the double with 302 patients and the triple with 56 patients. The achievement was especially gastric and concerned 61.93% (623) patients, followed by that of the esophagus and duodenum respectively at 41% (419) and 22.32% (223) patients

Table 1. Demographics of 1022 patients.

		Enrollment (%)	Cumulative headcount (%)
Gender	Male	470 (46)	470 (46)
	Female	552 (54)	1022 (100)
Age*		42,636	41.72 ± 15.59
Age group (years)	[7 - 14]	11 (1.07)	11 (1.07)
	[15 - 20]	62 (6.07)	73 (7.14)
	[21 - 30]	209 (20.45)	282 (27.59)
	[31 - 40]	243 (23.78)	525 (51.37)
	[41 - 50]	209 (20.45)	734 (71.82)
	[51 - 60]	153 (14.97)	887 (86.79)
	[61 - 70]	92 (9.00)	979 (95.79)
	≥71	43 (4.21)	1022 (100)

*: Expressed on average ± standard deviation.

Table 2. The different indications of UGIE at CHU-SS in Bobo-Dioulasso.

Indications	Numbers (n)	Percentages (%)
Epigastric pain	497	48.6
Search for HTP	109	10.6
GERD	101	9.9
Upper gastrointestinal bleeding	88	8.6
Dysphagia	45	4.4
Vomiting	41	4
Dyspepsia	27	2.6
Stomach operated control*	26	2.5
PUD control	19	1.9
Anemia	17	1.7
Suspicion of gastric tumor	14	1.4
Caustic burn	11	1.1
Other abdominal pain	10	1.0
Halitosis	06	0.6
Chronic gastritis	04	0.4
Various	07	0.7
Total	1022	100

*: Stomach surgery for ulcer complications (2.3%) and gastric tumor (0.2%).

(**Table 3**). We observed a predominance of inflammatory lesions (63.22%). A total of 1412 lesions (**Table 3**) was observed during our study including 38.38% of gastropathy, 19.19% of peptic ulcer and 16.64% of reflux esophagitis. Note

Table 3. Topographic distribution of different lesions observed in UGIE.

	Observed lesions	Number of lesions	Percentage of lesion	Endoscopic prevalence
Esophagus	Peptic esophagitis	235	16.64	22.99
	Mycotic oesophagitis	59	4.18	5.77
	Caustic esophagitis	9	0.64	0.88
	Other esophagitis	4	0.28	0.39
	Oesophageal ulcer	15	1.06	1.47
	Oesophageal dysmitosis	14	1.00	1.37
	Polyp	4	0.28	0.39
	Varicose veins	99	7.01	9.68
	Stenosis	18	1.28	1.76
	Mega-esophagus	3	0.21	0.30
	Constrictions upper 1/3	1	0.07	0.10
	Diverticulum	1	0.07	0.10
	Total oesophageal lesions	462	32.72	41
	Stomach	gastropathie	542	38.38
Gastric Ulcer (UG)		172	12.18	17.10
Gastric dysmitosis		23	1.63	2.29
polyps		4	0.28	0.40
gastroparesis		7	0.50	0.69
Antro-pyloric stenosis		7	0.50	0.69
Total gastric lesions		755	53.47	61.93
Duodenum		Duodenal ulcer (DU)	99	7.01
	Duodenopathie	53	3.75	5.30
	Biliary duodeno-gastric reflux	33	2.34	3.30
	Bulbar-duodenal stenosis	7	0.50	0.70
	Duodenal polyp	2	0.14	0.20
	Dysmitosis of the duodenal papilla	1	0.07	0.10
	Total duodenal lesions	195	13.81	19.81
Total observed lesions	1412	100		

that gastropathies and peptic ulcer disease (PUD) were reported respectively in 484 (48.11%) and 271 (27%) patients, of the patients examined by UGIE. As other lesions observed, it was esophageal varices of the stomach and esophagus dysmitoses reported respectively at 9.68%, 2.29% and 1.37% of our patients.

Depending on the indication of UGIE (**Table 4**), the epigastrialgies were the main circumstance of peptic esophagitis discovery (52.3%) of gastropathies (49.17%) and PUD (46.12%) in our patients. Portal hypertension was the major factor in the demonstration of 62.63% of esophageal varices (VO). The main

Table 4. Distribution of main lesions observed by major indication of UGIE.

	Gastropathy	PUD	Peptic esophagitis	VO	Oesophageal candidiasis	Gastric cancer	Oesophageal cancer
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Epigastric pain	238 (49.17)	125 (46.12)	123 (52.3)	14 (14.14)	24 (40.68)	2 (8.69)	2 (14.29)
Search for HTP	67 (13.84)	32 (11.80)	10 (4.2)	62 (62.63)	7 (11.86)	1 (4.35)	0 (0.00)
GERD	50 (10.33)	16 (5.90)	37 (15.74)	2 (2.02)	7 (11.86)	0 (0.0)	0 (0.0)
UGI bleeding	31 (6.40)	51 (18.82)	13 (5.53)	18 (18.18)	6 (10.17)	6 (26.09)	3 (21.42)
Dysphagia	20 (4.13)	4 (1.48)	6 (6.4)	0 (0.0)	7 (11.86)	0 (0.0)	8 (57.14)
Vomiting	18 (3.72)	10 (3.69)	4 (4.25)	0 (0.0)	2 (3.39)	3 (13.04)	1 (7.14)
Dyspepsia	14 (2.89)	4 (1.48)	4 (4.25)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

lesions observed in the GER syndrome were especially peptic esophagitis (15.74%) and fungal (11.86%). Upper gastrointestinal bleeding was a diagnostic circumstance of 18.82% of PUD and 18.18% of VO (Table 3). Dysphagia was the circumstance of diagnosis for 57.14% of esophageal dysmitoses and 11.86% of esophageal mycosis.

Histologically, only 53.88% (236) of the results of our various biopsies (438) were available. It was: 209 (88.56%) cases of gastritis which 192 (91.87%) cases of chronic gastritis; 17 cases of gastric adenocarcinoma and 1 case of gastrointestinal stromal tumor (GIST). In esophageal level 8 cases of adenocarcinoma and one case of carcinoma in situ, and 1 case subacute oesophagitis is diagnosed. In the duodenum, one case of adenocarcinoma papilla duodenal and 1 case of subacute duodenitis were reported.

4. Discussion

In our study the epigastric pains were the main indication (48.6%) of UGIE. This is a constant indication of UGIE which is also reported in the literature [3] [6] [7] [8] [9] [11] [18] [19]. The frequency of epigastric pains in our study is close to that of several other authors [6] [9] [11], but remained higher than that of others [1] [3] [7] [8] [18] respectively related frequencies between 30.2% and 43.5%. It remains below the 60.68% reported by Lawson-Ananissou L.M. [9] in Lomé, to 58.9% of Stephen in Ghana, and 72.9% of Peghini M. [20] Antananarivo. These differences may be related to the difficulty some patients meet to characterize their painful symptoms. Similarly, the type of endoscopic lesions observed in different series could explain this variability in the frequency of this indication. Other indications of UGIE in our study were HTP, GERD, digestive bleeding and dysphagia. The research of portal hypertension signs was a rare indication of some authors [8] [11] who reported that between 0.22% and 1.33%.

Our result was higher than those of other authors [5] [9] who reported frequencies of 5.9% and 6.97%, but remained near the 10.8% of Taye [14] in Ethiopia. Attia Y. [1] in Abidjan brought back a frequency at 15.75% of this indication. This is actually a particular indication, which depends more on the practitioner and the patient's complaint. In our series, the relative high frequency (10.7%) of this indication was related to the classical indications (before clinical or endoscopic signs of HPT), as well as its systematic indication before a chronic viral liver disease B or C. GERD represented 9.9% indications of UGIE in our study. This frequency is close to those of other authors [6] [8] [11] [19] who reported results varying between 8.9% and 9.8%. RGO in our study was 1.6 times higher than in Fasla H. [3] and Peghini [20], but remained far ahead of those of other authors [4] [9] [21] [22]. In Congo, Ibara JR [5] reported 20.1% of indications for RGO. The low frequency observed for this indication in some studies, seems not to be related to a real weakness of its frequency but probably related to the content of the definition of RGO in view of the high prevalence of dyspepsia in some series [4] [7] [12] [18] [22].

Digestive hemorrhage was an indication of UGIE in 8% of our patients. Similar frequencies are reported by other authors [6] [9] [11] [19] [20] [22]. Other frequencies higher between 11.29% and 26.2% were observed in other series [3] [7] [8] [12] [14] [18] [21]. Gyedu A [4] reported a frequency of 1.7% in Kumasi in Ghana. The gastrointestinal bleeding remains a fairly constant indication in the different series of endoscopies. The frequency differences could be related to the characteristics of each population studied (age), the associated risk factors and the type of endoscopic lesions. Indeed, on the one hand, some of its etiologies remain frequent, including PUD, esophageal varices observed in chronic hepatopathies with HTP and acute mucosal lesions due to the use of NSAIDs (non-steroidal anti-inflammatory drugs). On the other hand, population aging increases the number of patients on aspirin and other long-term NSAIDs. The latter are medicines taken most often in self-medication, a common practice in many cities.

Dysphagia was the indication of endoscopy in 4.4% of patients. Similar values are reported in other series [11] [12] [21]. Similarly our values are close to 6.3% of Fasla H. [3] and 6.4% of Tabiri S. [19]. Dysphagia appeared as a rare indication of UGIE, according to some authors [4] [9] [18] [22] who reported between 1% and 2.2%. Ismaila BO, in Nigeria [6] reported a rate of 10.7% for dysphagia among the indications. Variations of this indication are related to the epidemiology of causal diseases. Dysphagia is a late sign of certain neoplasias. In developing countries, late consultation might explain its relative frequency.

We had observed at the upper digestive tract, a predominance of inflammatory pathology (64.94%) at endoscopy. This predominance of the inflammatory pathology was confirmed histologically which reported that 89.41% of the parts of biopsies. It was dominated by gastritis (88.56%). This same observation is made by the majority of African authors [3] [4] [5] [6] [11] [12]. This predomi-

nant gastritis with inflammatory dominance in our study can be explained by the widespread use of anti-inflammatory drugs for self-medication, frequent intestinal parasites in our context, alcohol, and duodenal-gastric bile reflux. While stressing the descent of the inflammatory pathology, some African authors [9] [18] [19] reported a predominance of the PUD. Tunc M. Turkey [22] instead reported a prevalence of PUD far ahead of inflammatory pathology.

In our study, the disease PUD was present in 27% (271) of patients examined. Our results are close to those of other authors [8] [11] [18] which reported prevalences between 22.8% and 31.65%. Our prevalence is higher than those of other series [1] [4] [6] [9] [12], but remains well below the 33.5% to 47.5% reported by other authors [5] [7] [19] [20] [22]. We found that the ulcer was 1.69 times more localized in the stomach and in the duodenum in our study. This is in contradiction with the literature and with the results of a number of authors [1] [5] [7] [8] [9] [11] [18] [20]. Our results are similar to those of other Burkinabe authors [2] [10] [15] and West Africans [4] [19]. Similarly, Tunc M. [22] in Turkey noted a prevalence of gastric ulcer localization.

The esophageal varices were present in 9.68% of our patients. Lower prevalences, ranging from 1.2% to 6.39% are reported by some African authors [4] [5] [6] [9] [11] [12] and Turkish [22]. Our value is, however, close to that of Attia [1] in Ivory Coast which reported 8.5% of esophageal varices. The high incidence of cirrhosis and liver cancer in our context could be an explanation. Our technical platforms are limited for the curative treatment of liver cancers; one of the palliative alternatives is to take care of the complications in order to lengthen if possible the survival of the patients.

The dysmitoses of the upper digestive tract were reported in 3.76% ($n = 38$) of patients examined. It was histologically 18 (1.79%) cases of gastric cancer that predominated and 9 (0.88%) cases of esophageal cancer. This predominance of gastric cancer among cancers of the upper digestive tract is also reported by many authors [4] [5] [7] [9] [11] [12] [18] [19] [22] with prevalence included between 0.92% and 6.7%. Other authors reported rather, a predominance of esophageal cancer [6] [8]. These results show that upper gastrointestinal cancers and stomach cancer are no longer rare in Africa. Indeed, the increasing availability of populations with endoscopic examinations predicts a number of cases in subsequent years. Risk factors are also more frequent with globalization: Smoking, alcoholism, excessive consumption of red meat, too salty and too greasy food.

The epigastric pains were our main discovery circumstance of: Reflux esophagitis, the gastropathie and the PUD. This same observation was made by Kodjoh N [8] in Benin who reported 41.7% of esophagitis, 37.7% of gastritis and 28.9% of PUD discovered after this indication. This is explained by the fact that the epigastric pains were in our two series the main symptom reported by patients. It is a common symptom in both digestive pathologies and heart disease.

5. Conclusion

This study shows that the epigastric pain was the main indication of UGIE with

patients received in the digestive endoscopy unit at CHU-SS. Pathologies observed were dominated by gastritis, the esophagitis and PUD disease. On the other hand, is there an emergence of cancers of the stomach and the esophagus?

Conflict of Interest

The authors state not to have conflict of interest.

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