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Upper Endoscopic Lesions in the Elderly

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Abstract

Introduction: advanced age is characterized by physiological changes and increased susceptibility to specific lesions. The aim of this study was to describe the practice of upper gastrointestinal endoscopy (UGIE) in patients aged 60 or over in two digestive endoscopy units in Zinder, Niger. **Methodology**: this was a cross-sectional study with retrospective data collection carried out from January 1, 2020 to December 31, 2022, including subjects aged 60 and over who had undergone UGIE. **Results**: The study covered 184 reports from a total of 1,331 upper gastrointestinal endoscopies, representing a frequency of endoscopy in the elderly of 13.82%. The mean age of patients was 66.14 ± 6.81 years, with extremes of 60 and 90 years. The sex ratio was 1.62. 85.33% (n = 157) of patients were from rural areas and 85.87% had no fixed income. Epigastralgia in 51.35% (n = 114) and vomiting in 10.81% (n = 26) were the main indications. Endoscopic examination revealed lesions in 90.77% (n = 167). Gastric involvement, dominated by gastropathic lesions in 53.80% (n = 99), accounted for 73.36% (n = 135) and esophageal involvement 16.30% (n = 30). Inflammatory pathology accounted for 62.87% (n = 105), followed by peptic

ulcer disease in 12.57% (n = 21) and tumor pathology in 10.77% (n = 18). Biopsies were performed in 16.3% (n = 30). Histological results from twenty-four patients (80%) revealed fourteen gastric adenocarcinomas, four esophageal squamous cell carcinomas, five cases of chronic *Helicobacter pylori* gastritis and one hyperplastic polyp. **Conclusion**: upper endoscopic lesions in the elderly are dominated by inflammatory pathology. This inflammatory pathology can sometimes mask tumoral lesions, hence the need for systematic biopsies in the presence of any macroscopic lesion when the subject is symptomatic, all the more so in the elderly.

Keywords

Elderly, Upper Gastrointestinal Endoscopy, Inflammation, Gastropathy, Cancer

1. Introduction

1.1. What Is Known about the Subject

Advanced age is characterized by changes in the normal functioning of organs, with susceptibility to particular lesions or pathologies.

1.2. The Question Addressed in This Study

Sociodemographic characteristics of patients aged 60 or over, indications of upper gastrointestinal endoscopy and oesogastroduodenal lesions found.

1.3. What Is New in This Study

1. Requests for upper GI endoscopy are increasingly frequent in the elderly.

2. Upper endoscopic lesions in the elderly are dominated by inflammatory pathology.

3. The inflammatory pathology can sometimes mask tumoral lesions.

3. Biopsies should be performed systematically in the presence of symptoms, even if upper GI endoscopy is macroscopically normal.

2. Introduction

Early use of health services and continuous improvements in diagnosis and treatment have resulted in increased life expectancy for populations in developed countries [1]. Advanced age is conventionally defined as a chronological age of at least 65 years [2]. However, studies have shown that chronological age in no way reflects an individual's state of health. The susceptibility of an elderly person to manifest symptoms or develop a disease varies from one person to another [3]. In recent years, the number and proportion of elderly people have increased exponentially in every country in the world [1]. According to the World Health Organization, the proportion of the world's population aged 65 and over will almost

double, rising from 12% to 22% between 2015 and 2050. This increase in the proportion of older people affects developed countries as well as low- and middle-income countries [1]. Advanced age is characterized by changes in normal organ function [4]. These dysfunctions affect all functions, and can sometimes be pathological [4]. Digestive tract function is particularly affected by advanced age. Digestive symptoms are common in the elderly. This category of patients is particularly exposed to upper and/or lower digestive pathologies, notably inflammatory and/or tumoral pathologies [5]-[11]. Studies have shown that the risk of developing cancer and/or other inflammatory lesions, depending on the segment of the digestive tract, is particularly associated with advanced age [10] [11]. However, age-related diseases of the digestive tract are variable and differ from one geographical area to another. Elderly patients from developed countries are more often exposed to tumor pathologies [10], whereas those from low socio-economic countries tend to develop other inflammatory diseases, notably esogastroduodenal pathologies related to helicobacter pylori infection [11]. The diagnosis and, above all, management of upper gastointestinals symptoms have been revolutionized by upper gastointestinal endoscopy (UGIE), a technique for exploring the digestive tract from the esophagus to the second portion of the duodenum. UGIE has diagnostic, therapeutic and monitoring value [12]-[14]. Although common practice in developed countries, UGIE remains of limited use in developing countries in general, and in Niger Republic in particular, due to inadequate technical facilities, a lack of competent human resources and limited financial and local accessibility for patients. Initially practised only in the capital, UGIE is now common practice in the interior of the country, particularly in the diagnostic component. In a study carried out in 2023 at the National Hospital in Zinder, the monthly frequency was 48 uppers gastrointestinals endoscopies [15]. In view of the physiologicals particularities and epidemiologicals and geographicals variabilities of advanced age in the onset of digestive symptoms and pathologies, we thought it would be useful to carry out this study. The aim of this study was to determine the sociodemographic characteristics of patients aged 60 or over who underwent upper gastrointestinal endoscopy, and to list the indications and oesogastroduodenal lesions found.

3. Materials and Method

This was a cross-sectional study with retrospective data collection covering all upper gastointestinal endoscopy (UGIE) reports performed on patients aged 60 or over in two digestive endoscopy centers (National Hôpital and Aida MedicaleClinique) in Zinder, from 1st January, 2020 to 31st December, 2022, a period of three years. Endoscopic examinations were carried out by two hepato-gastroenterologists and endoscopists, assisted by two nurses trained as endoscopic assistants. Endoscopy was performed after verbal consent had been obtained from the patient, who was informed of the benefits and procedure of the examination, as well as any possible complications. UGIE consisted of video-endoscopic

exploration of the mucous membranes of the oesophagus, stomach and duodenum up to its second portion. This examination was performed after a fast of at least six hours, including the absence of smoking. This fasting was systematically supplemented by light locoregional sedation with xylocaine buccal gel. At the patient's request, sedation with propofol or general anaesthesia was performed. Given our context as a developing country where life expectancy continues to fall, we have defined the elderly as those aged 60 and over. Our study included all usable reports of upper gastrointestinal endoscopy performed on patients aged 60 or over, whatever the indication. We did not include reports of upper gastrointestinal endoscopy performed on patients aged under 60. Exclusion criteria included insufficient fasting, poor tolerance of the examination, incomplete reports and requests for UGIE without indication. For each report, we analyzed the sociodemographic parameters (age, sex, profession), the indications and the results of the UGIE. When biopsies were taken for pathological examination, the fragments were fixed in 10% formalin in labelled jars. Endoscopic lesions were analyzed according to the anatomical segments of the upper digestive tract and their mechanism (inflammatory, tumoral or other) of occurrence. Data were entered using Excel 2007 and analyzed using Epiinfo7TMCDC software. Categorical variables were presented as percentages, quantitative variables as means with standard deviations.

4. Results

During the study period, 1,331 upper gastrointestinals endoscopies were performed, 184 of them on patients aged 60 or over, representing a frequency of 13.82%. There were 114 men (61.96%) and 70 women (38.04%), giving a sex ratio of 1.62. The mean age of the patients was 66.14 ± 6.81 years, with extremes of 60 and 90 years. The 60 to 69 age group accounted for 68.47% (n = 126), followed by the 70 to 79 age group in 23.91% (n = 44). Patient origin was rural in 85.33% (n = 157) and urban in 14.67% (n = 27). Our sample included farmers in 38.58% (n = 71), housewives in 36.41% (n = 67), civil servants in 14.13% (n = 26) and shopkeepers in 5.43% (n = 10) (Table 1).

Table 1. Distribution of patients by sociodemographic parameters.

Parameters	Actual (n)	Percentage (%)
Gender		
Males	114	61.9
Females	70	38.0
Age Groups		
60 - 69	126	68.5
70 - 79	44	23.9
80 - 90	14	7.6

Continued

Origin		
Rural	157	85.3
Urban	27	14.7
Occupation		
Farmers	71	38.6
Housewives	67	36.4
Civil servants	26	14.1
Traders	10	5.4
Pupils/students	05	2.7
Craftsmen	05	2.7

Indications for upper GI endoscopy were epigastralgia in 51.35% (n = 114), vomiting in 10.81% (n = 24), dysphagia and screening for esophageal varices in 8.55% (n = 19) each, abdominal pain in 6.75% (n = 15) and GI bleeding in 5.85% (n = 13) (Table 2).

Table 2. Distribution of patients according to the indications of upper gastrointestinal endoscopy.

Indications	Actual (n)	Percentage (%)
Epigastralgia	114	51.4
Vomit	24	10.8
Dysphagia	19	8.6
screening for oesophageal varices	19	8.6
Diffuse abdominal pain	15	6.8
Hematemesis/Melena	13	5.9
Anaemia	6	2.7
Pyrosis	5	2.3
Searching for the primary site of a secondary cancer	2	0.9
Halitosis	2	0.9
Impaired general condition	2	0.9
Suspicion of Valerian ampulloma	1	0.5
Total	222	100

Endoscopic examination found lesions in 90.77% (n = 167). Upper gastrointestinal endoscopy was normal in 9.23% (n = 17). The main aspects observed endoscopically according to the topography of the upper digestive tract are summarized in Table 3.

Table 3. Distribution of patients according to the results of the upper gastrointestinal endoscopy.

Segment	Endoscopic lesions	Actual (n)	Percentage (%)
	Normal UGIE	**17**	**9.2**
Esophagus	Mycotic esophagitis	8	4.3
	Peptic esophagitis	6	3.3
	Esophageal varicose veins	13	7.1
	Tumour	3	1.6
	Total esophagus	**30**	**16.3**
Cardia	Hiatal hernia	2	1.1
Stomach	Gastropathy	99	53.8
	Ulcer	21	11.4
	Polyp	1	0.5
	Tumour	14	7.6
	Total stomach	**135**	**73.4**
Duodenum	Biliary reflux	13	7.1
	Bulboduodenitis	1	0.5
	Pyloric stenosis	3	1.6
	Bulbar ulcer	3	1.6
	Papilla tumor	1	0.5
	Total duodenum	**21**	**11.4**

Endoscopically observed lesions by mechanism were represented by inflammatory pathology in 62.87% (n = 105), followed by peptic ulcer in 12.57% (n = 21) and tumor pathology in 10.77% (n = 18) (Table 4).

Table 4. Distribution of endoscopic lesions by mechanism.

Types of Injuries	Actual (n)	Percentage (%)
Inflammatory pathology	105	62.9
Tumor pathology	18	10.8
Peptic ulcer	21	12.6
Other*	23	13.8
Total	**167**	**100**

*esophageal varices, esophageal mycosis, hiatal hernia.

During upper gastrointestinal endoscopy, thirty patients (16.3%) underwent biopsies for anatomopathological confirmation of certain macroscopic aspects. Histological reports from twenty-four patients (80%) revealed fourteen gastric adenocarcinomas, four esophageal squamous cell carcinomas, five cases of chronic Helicobacter pylori gastritis and one hyperplastic polyp.

5. Discussion

The aim of our study was to describe and analyze upper endoscopic lesions observed in patients aged 60 and over in two digestive endoscopy units in the town of Zinder, Niger. People aged 60 and over accounted for 13.82% (n = 184) of patients receiving upper gastrointestinal endoscopy during the study period. The frequency of upper gastrointestinal endoscopy in elderly subjects found in our study is close to those found by Lawson-Ananissoh *et al*. [13] in Togo, Sake *et al*. [14] in Benin, with 12.55%, and 16.17% respectively. Our frequency is higher than those found by Bangoura *et al*. [12] in Ivory Coast and Tolo *et al*. [15] in Mali, with 7.5% and 10.1% respectively. The variable endoscopic frequencies could be explained by the definitions of the elderly subject, which vary from one methodology to another, and by sample sizes [12]-[15]. The mean age of our patients was 66.14 ± 6.81 years, with extremes of 60 and 90 years. Our results are comparable to those of Lawson-Ananissoh *et al*. [13], Sake *et al*. [14] and Tolo *et al*. [15], with 68.5, 67.15 ± 6.38 and 68.3 ± 6.4 years respectively. Male sex accounted for 61.96% in our study. Sake *et al*. [14] found a male predominance with a sex ratio of 1.26. Our result can be explained by men's better local and financial accessibility to care in general and to endoscopy in particular, in contrast to the female predominance observed in other studies that have addressed the same issue [12] [13] [15]. Our patients, 38.58% of whom were farmers (n = 71) and 36.41% housewives (n = 67), came from rural areas (85.33%, n = 157). This situation could be explained by the geographical position of our study area, which is a city with a large suburban area. Epigastralgia was the main indication (51.35%) for upper gastrointestinal endoscopy, followed by vomiting (10.81%).

Other authors have found a predominance of epigastralgia in indications for digestive endoscopy in general and in the elderly in particular [12]-[16]. This high proportion of epigastralgia could be explained by the fact that all abdominal and thoracic symptoms are considered by patients to be epigastralgia [17]. Endoscopic examination revealed lesions in 90.77% (n = 167). Endoscopy was normal in 9.23%. Our results are similar to those found in the literature, and could be explained by the fact that these subjects had already presented several digestive symptoms and signs at a young age, for which endoscopic examinations were not performed and symptomatic treatments were administered [12]-[16].

The location of lesions is gastric in 73.36% and esophageal in 16.30%. The gastric location was frequently found in the literature, given the exposure of elderly subjects to numerous factors of aggression on the stomach, notably Helicobacter pylori infection, associated comorbidities and poly-medications such as non-steroidal anti-inflammatory drugs frequently used by the elderly for the management of rheumatological conditions [5]-[11]. Gastric lesions were dominated by inflammatory pathology, such as gastropathy in 53.80%, gastric ulcer in 11.41% and tumour pathology in 7.60%. The predominance of inflammatory pathology was found in Côte d'Ivoire, Togo, Benin and Mali, with 39.81%, 59.73%, 82.73% and 50%, respectively [12]-[15]. These inflammatory lesions could be due to gastric

aggression in the elderly, associated with the use of non-steroidal anti-inflammatory drugs [18]. Tumor pathology accounted for 10.77% (n = 18) of endoscopic lesions. This pathology could probably be underestimated by macroscopic aspects of a non-tumoral inflammatory pathology.

Biopsies were taken in thirty patients (16.3%). Twenty-four patients (80%) had undergone anatomopathological analysis, and the histological results were divided into fourteen gastric adenocarcinomas, four esophageal squamous cell carcinomas, five cases of chronic Helicobacter pylori gastritis and one hyperplastic polyp. Our results are close to those found by Lawson-Ananissoh *et al*. in Togo [18]. These results confirm the growing importance of tumoral pathology in the repertoire of pathologies of the elderly. Systematic biopsies of symptomatic elderly subjects with macroscopic inflammatory lesions were to provide further evidence.

6. Conclusion

Upper endoscopic lesions in the elderly are dominated by inflammatory pathology. This inflammatory pathology can sometimes mask tumoral lesions, hence the need for systematic biopsies in the presence of any macroscopic lesion when the subject is symptomatic, all the more so in the elderly.

Conflicts of Interest

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

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