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Pitfalls and Diagnostic Difficulties Related to Digestive Tract Cancers in North-Benin

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Abstract **Original Research Article**

Introduction: Treatment of digestive cancers is not the only challenge for the practitioner over the world. Getting sound diagnosis still remains a big challenge given the pitfalls and difficulties occurring at this stage. The objective of the current study was to unravel pitfalls and difficulties related to the diagnosis of digestive cancer in northern Benin. ***Methodology:*** a cross-sectional study carried out from 2013 to 2017 at 4 hospitals in northern Benin was designed to discuss the efficiency of the current diagnosis tools and their limits for a good diagnosis. ***Results:*** In total, 141 cases of digestive malignancy were clinically suspected. The anatomo-pathological study was performed in 47.5% of cases (n=67) and did not confirm the disease in 25.4% of cases (n=17). Computed tomography was also applied in 3.5% of cases (n=5). The most frequent differences occurred in diagnosing gastric ulcers (5/17), adenoma and colonic polyps (4/17), erosive esophagitis (3/17), erosive gastritis (3/17), digestive tuberculosis (2/17). The non-availability of appropriate diagnosis tools, the assessment cost of clinical status, and the lack of financial means and advanced deterioration of patient's clinical condition remain the major factors limiting a sound diagnosis. ***Conclusion:*** Diagnostic difficulties are almost present when suspecting digestive tumor and may explain the reason why digestive cancers were underestimated in our context.

Keywords: Digestive cancer, pitfalls and difficulties, differential diagnosis, North Benin.

INTRODUCTION

Cancer also called malignant tumor or neoplasm is one of the major causes of death worldwide (10 million deaths in 2020) [1]. Death rate due to cancer in African and Asian countries was 58.3% and 7.2%, respectively. Such rate was higher compared to the overall cancer incidence in the same regions (49.3% and 5.7%, respectively) [1]. Digestive cancers account for 18.8% of the major body cancers [1]. In Africa, several studies showed a marked increase in digestive cancers over time [2-6]. In Niger, between 1992 and 2009 the number of recorded cancers has significantly increased from 186 cases in 1992 to 646 cases in 2009, including 594 digestive cancers [6]. In addition, several studies reported that surgical diagnosis related to curative surgery was low at the diagnosis time, 23% and 41.5%, according to Tobomè *et al.*, and Allodé *et al.*, [2, 3], respectively. Actually, treatment of digestive cancers is not the only challenge for practitioners, but also getting a sound a diagnosis remains a major issue worldwide with many pitfalls and difficulties. The objective the current work was to unravel the pitfalls and difficulties when establishing diagnosis of digestive cancer at different hospitals in northern Benin.

PATIENTS SAMPLING AND METHODS

The present work was a cross-sectional, retrospective and descriptive study covering a period of 5 years, from January 1, 2013 to December 31, 2017. The target population consisted of patients of both sexes admitted to the surgical departments of 4 hospitals in North Benin, namely Borgou Departmental University Hospital, Bembèrèkè confessional hospital, Papanè hospital Saint Martin, Tanguiéta confessional hospital. The selection criteria include clinical or intraoperative suspicion of malignant tumor in the digestive tract, and the availability medical data profile. An exhaustive

census of patients fulfilling these criteria was performed. The occurrence of digestive cancer was confirmed using anatomo-pathological examination of a biopsy or operated specimen.

Data collected were related to socio-demographic characteristics of patients, clinical and paraclinical information and their classification as well. Data were processed using Epi Data Analysis software version 7.2.1.

Consent from competent authorities at various levels was obtained prior to data collection and patients' anonymity was guaranteed.

RESULTS

Frequency of Digestive Cancers

The total number of patients admitted to the surgical departments of the 4 hospitals was 29,481 during the period covered by the study. Of these, 141 patients were suspected for digestive cancer. The anatomopathological examination confirmed digestive cancer for 50 patients, i.e. 0.17% (Fig. n°1). A total of 79 lesions were recorded on different digestive organs considering thee 50 patients (Fig. 2).

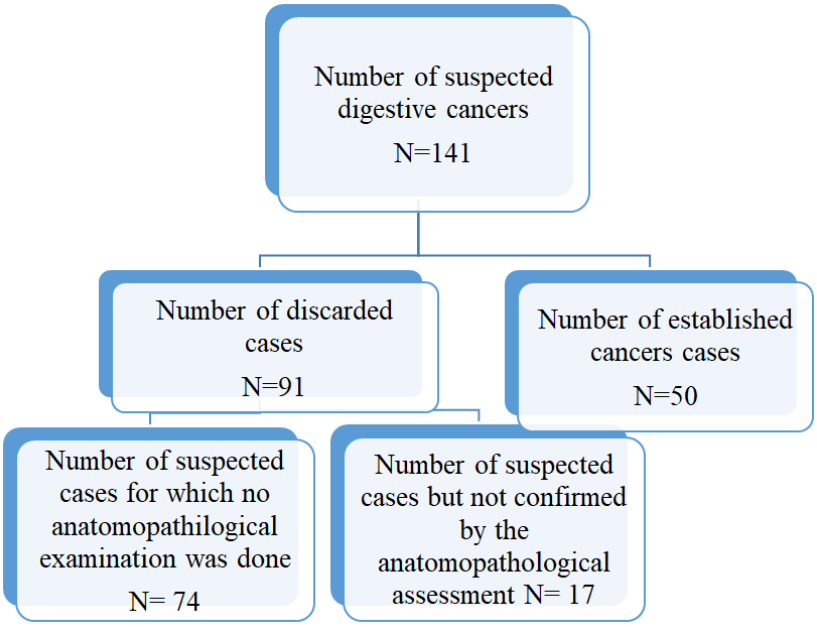

Figure n°1: Flow diagram showing difficulties and pitfalls in diagnosing digestive cancers at four hospitals in Northern Benin

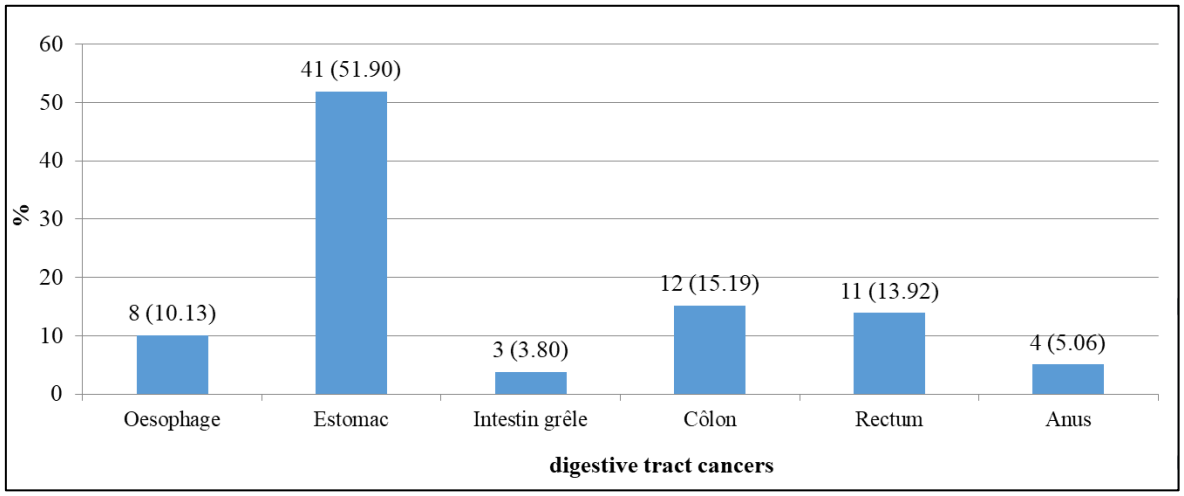

Figure n°2: Topographic distribution of digestive tract cancers for 50 patients

Œsophage=esophagus; estomac=stomach; intestin grèle=small intestin; Côlon=colon; Rectum=rectum; Anus=anus

Diagnosis Difficulties

The completion rate of the anatomo-pathological examination was 47.5% (67/141). Of the 74 patients for whom the anatomo-pathological examination could not be carried out, the lack of financial means and clinical states were found to be the most limiting factor for 26 (35.1%) and 37 (50%) patients, respectively. Moreover, the lack of information and non-availability of the examination accounted for 14.9% of the patients. Table 1 gives the presumption elements of digestive cancer for patients who were not examined using the anatomopathological method.

Likewise, the essential morphological examinations (digestive endoscopy and computed tomography) were carried out only for 67 patients out of 141, ie a completion rate of 45.5%. Thus, digestive endoscopy was performed in 59 patients, while computed tomography for only 5 patients.

Table I: Suspecting elements of digestive cancer for patients who did not take the anatomopathological assessment

	Number	Percentage (%)
ŒSOPHAGUS	10	13.5%
Dysphagia + AEG stage IV	3	
Paradoxical dysphagia + pneumonia + AEG stage IV	7	
STOMACH	34	45.9%
Epigastric mass on examination + AEG stage IV	11	
Abdominal mass with the vicinity invasion at the laparotomy	15	
Late postprandial vomiting relieving the patient + AEG stage IV	8	
COLON	28	37.9%
Mass in iliac fossa + AEG stage IV	9	
Inextricable colonic mass with invasion at laparotomy	19	
ANUS	2	2.7%
Palpable mass on anal touch	2	

Diagnosis Pitfalls

The diagnosis of digestive cancer was not validated for 17 patients after the anatomo-pathological examination. Table 2 reports the macroscopic lesions noted and the histological diagnoses retained. Two cases of digestive tuberculosis were detected in this patients' group.

Table II: Diagnosis Pitfalls (differential diagnosis) as revealed by histological assessment

Clinical or per-endoscopic aspect	Number	Histological appearance
ŒSOPHAGUS		
Erosive lesion	3	œsophagitis
STOMACH		
Budding ulcerative lesion	5	Gastric ulcer
Erosive lesion	3	gastritis
Ulcero-hypertrophic lesion	1	Stomachal tuberculosis
COLON		
Budding ulcerative lesion	2	adenoma
Budding ulcerative and perforated lesion	1	Colonic tuberculosis
Budding lesion	2	polyp

DISCUSSION

The frequency of digestive tract cancers at the four (04) target hospitals in northern Benin was 0.17%.; it may be underestimated in our study because 74 suspected cases did not benefit from anatomopathological examination. Indeed, digestive cancers account for 18.8% of the overall frequency of cancers worldwide [1]. This frequency varied according to the country, and also within study types. For instance, in Niger, digestive cancers represent 8.44% of all cancers types between 1992 and 2009 [6]. In Mali (Bamako), Diarra *et al.*, (2012) reported a rate of 7.4% of digestive cancers. This study was carried out at one hospital [4].

Stomach cancers were the most observed in the digestive tract (51.90%). Such observation was frequently reported in Africa in several studies [4, 5, 7]. In Benin, in 2012, Allodé *et al.*, found that stomach cancers accounted for 41.2% of all cancers' types [2]. The gastric location could be explained by the frequency of gastric ulcers and gastritis linked to common *Helicobacter pylori* infections and other risk factors specific to the dietary habits of black peoples in Africa [8, 9]. Stomach cancer in terms of incidence ranked the sixth worldwide according to Globocan 2020 [1]. Mahammat *et al.*, found colon cancer more frequent (25%) compared to stomach cancers.

Diagnosis difficulties were related to many factors (multifactorial). Firstly, delays in consultation were more frequent in low-income countries [11-13]. In this study, 37 patients out of the 74 who could not carry out the anatomopathological assessment were admitted when reached an inoperable clinical state. Bang GA *et al.,* diagnosed most of their patients at stage 3 and 4 (71.2%) and systematic screening was never organized, palliative surgery accounted for35.5% of all cases [14]. Other factors identified were financial means, technical platform (material), non- availability of anatomopathological service, distance from patients' home and hospitals, lack of qualified human resources. Thus, patients may support the full treatment cost. In the four regions of northern Benin, only one pathological anatomy service with limited resources was available to perform digestive endoscopy and computed tomography services. Moreover, patients live far from the hospitals' location (several dozen kilometers). Also, qualified human resources were scarce. There is no oncologist in the northern region of Benin; only two pathologists work at one hospital in the Northern region of Benin. The WHO has already warned of capacity building in African countries in order to optimize cancers management. Likewise several studies highlighted the role of research and appropriate technical platform [15, 16].

The current demonstrates the importance of carrying out the histopathological examination not only to specify the tumor type and stage, but also to distinguish and discard non-malignant tumor. Cases of pseudotumor of tuberculosis origin in the digestive tract, which became scare, were then caught up and often successfully treated with chemotherapy. Several authors reported rarely these cases and their particularities [17-21].

CONCLUSION

Late diagnosis, the lack of equipment, the lack of oncology specialists and the non-accessibility of paraclinical examinations are the major issues in cancers management, that heavily worsening the prognosis.

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