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Research Article.

Prognostic Factors for Digestive Surgical Emergencies in the General Surgery Department of the Regional Hospital of Kindia (Rep. Guinea)

Keita Seydou*, Sylla Alpha Mamadou, Traore Lanssana, Conde Amara, Keita Doubany Mariame, Kondano Saa Yawo, Diakite Sandaly, Soumaoro Labile Togba, Fofana Houssein, Toure Aboubacar

Department of General Surgery, Ignace Deen National Hospital, Conakry, Guinea

Abstract

Introduction: The goal the aim of this study was to describe the epidemiological, therapeutic and prognostic factors of digestive surgical emergencies at the Kindia regional hospital. *Methodology:* This was a prospective descriptive study lasting 6 months on patients admitted and operated on for a digestive surgical emergency in the general surgery department of the Kindia regional hospital. *Results:* We recorded 103 cases of digestive surgical emergencies among the 219 patients admitted and operated on, i.e. a frequency of 31.9%. The average age of the patients was 30 years ± 5 years (10 and 64 years). The sex ratio was 1.5. Pupils/students were the most frequent (33.01%). Direct admissions constituted 64.07%. The majority of patients (73.83%) consulted more than 24 hours after the onset of symptoms. Abdominal pain was the main symptom, i.e. 100. More than half of the patients (69.90%) were operated on within 24 hours of admission. Appendectomies were the main techniques performed. We recorded 25.24% complications and 7.77% deaths. Delay in consultation and treatment were factors of poor prognosis. *Conclusion:* Digestive surgical emergencies constitute a public health problem in our context; raising public awareness and improving the technical platform would contribute to significantly reducing the morbidity and mortality rate.

Keywords

Digestive Surgical Emergencies, Regional Hospital, Kindia

1. Introduction

Digestive surgical emergency is an entity encompassing various acute abdominal pathologies, which may or may not be due to traumatic circumstances [1-5]. Digestive surgical emergencies occupy a significant part of the activity of surgical emergency services [4]. However, their management poses real public health problems in developing countries. Indeed, the insufficiency of qualified personnel, underequipment, the lack of emergency kits in our public hospital structures and the low level of income of the populations constitute all factors which worsen the prognosis of patients often admitted late at the stage of complications [2, 4, 6].

The goal the aim of this study was to describe the epidemiological, therapeutic and prognostic aspects of digestive surgical emergencies at the regional hospital of Kindia.

*Corresponding author: seydoukeita554 @gmail.com (Keita Seydou)

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2. Patients and Methods

This was a prospective, descriptive and analytical study lasting 6 months from January 1 to June 30, 2025, in the general surgery department of the Kindia regional hospital. It involved patients admitted and operated on urgently for an abdominal surgical condition at the Kindia regional hospital. It is the reference hospital on the lower coast of the Republic of Guinea which receives all medical and surgical emergencies in first-line consultation or referred from peripheral health structures. The service is provided by a mixed multidisciplinary team (general medicine, general surgery, pediatrics, maternity and anesthesiology). The supply of emergency kits is insufficient and inconsistent for the care of patients. The inclusion criteria were patients admitted and operated on for a digestive surgical emergency who gave their consent. The variables studied concerned the frequency, demographic characteristics (age, sex, profession, origin), etiologies, consultation time, diagnostic means, time and method of surgical management and postoperative follow-up. Probabilistic antibiotic therapy was used on a case-by-case basis depending on the type of surgery according to the Altemeier classification [7].

The data were collected on a pre-established survey sheet and analyzed using SPSS version 21 software. All quantitative variables were analyzed by determining the maximum, minimum, mean and standard deviation and those qualitative by their frequency and percentage. The comparison of percentages was carried out by the Chi2 method; a $p \leq 0.05$ was considered statistically significant.

3. Results

We collected 103 cases of digestive surgical emergencies, representing 31.9% of all admissions to the department during the study period (n=219).

The average age of patients was 30 years ± 5 years with extremes of 10 years and 64 years, the age group of 10 to 25 years was the most affected (44.67%). The male sex was the most predominant with a sex ratio (M/F = 1.5).

The most affected socio-professional categories were pupils/students (33.01%), followed by artisans (26.21%) and housewives (24.27%). Patients living in urban areas were the most affected socio-demographic categories, at 73.79%.

Direct admissions constituted 64.07% (n = 66) of cases and referrals from other care centers 35.92% (n = 37).

Traditional treatment and/or self-medication was the first resort of patients in 58.25% (n=60). Diabetes was present in 7 of our patients. Alcohol and tobacco consumption was reported by 11 of our patients and 9 of our patients had a history of surgery.

The mean admission time was 76.42 ± 63.20 hours (range: 1-426 hours); 73.79% of patients consulted more than 24 hours after the onset of symptoms.

The main clinical signs found are shown in *Table 1*.

Table 1. *Frequency of clinical signs.*

Clinical signs	Effective	Percentage
Functional signs		
Abdominal pain	103	100
Nausea/Vomiting	58	56.31
Stopping materials and gases	34	33.01
General signs		
Physical asthenia	44	42.72
Fever	19	18.45
Physical signs		
Blumberg	43	41.75
Contracture	29	28.15
Umbilical cry	29	28.15
Painful bulging Douglas	29	28.15
Abdominal bloating	21	20.39
Painful and irreducible swelling	8	7.76
Abdominal wound	3	2.91
Murphy Clinic	1	0.97

Plain abdominal X-ray was the most requested morphological examination in our patients (55.34%). followed by ultrasound (32.04%).

The blood count revealed 83 cases of hyperleukocytosis, (80.58%), and 31 cases of anemia (thb<10g/l), the ESR and CRP were accelerated in 89 cases (86.41%).

Table 2. *Distribution according to preoperative diagnosis.*

Preoperative diagnosis	Effective	Percentage
Acute appendicitis	39	37.86
Acute generalized peritonitis	32	31.07
Acute intestinal obstructions	24	23.31
Contusion with hemoperitoneum	4	3.88
Penetrating abdominal wound + evisceration	3	2.91
Acute lithiasic cholecystitis	1	0.97
Total	103	100

All patients received parenteral medical treatment either pre-, per- or post-operatively, consisting of antibiotics, analgesics, rehydration solutions in 100% and blood products in 30.1% of cases.

The average time to treatment was 15.4 hours with extremes of 0 hours and 34 hours. More than half of the patients (69.90%) were operated on within 24 hours of admission to the department.

Table 3 allows us to know the technique performed, appendectomies were the main techniques performed, 35.92% and cholecystectomy only represented 0.97%.

Table 3. *Distribution of patients according to the procedures performed.*

Actions taken	Effective	Percentage
Appendectomies	37	35.92
Appendectomy + toilet + peritoneal drainage	21	20.39
Excision + Suture	10	9.71
Hernia treatment	9	8.74
Resection + anastomosis	5	4.85
Splenectomy + hemostasis	4	3.89
Section of the flanges	4	3.89
Resection + colostomy	3	2.91
Ileal resection + ileostomy	3	2.91
Uterine suture + drainage	3	2.91
Reintegration of handles + toilet	3	2.91
Cholecystectomy	1	0.97

The immediate postoperative outcomes are shown in *Table 4*. We treated 26 cases (25.24%) of postoperative complications, among which three cases (digestive fistulas + malnutrition) were referred to the Ignace Deen National Hospital in Conakry.

Table 4. *Frequency of immediate postoperative effects.*

Post-operative care	Effective	Percentage
Simple	69	66.99
Parietal suppurations	19	18.45
Death	8	7.77
Digestive fistula	4	3.88
Evisceration	1	0.97
Postoperative peritonitis	1	0.97
Post-operative occlusion	1	0.97
Total	103	100

The factors of poor prognosis are summarized in Table 5, the delay in consultation was related to financial lack, the attitude of clinicians in private and neglect of the disease. The main causes of the delay in care were: waiting for additional examinations, the supply problem and the availability of the operating room.

Table 5. Poor prognostic factors.

Diagnosis	Consultation >24 hours (%)	support >24 hours (%)	Morbidities (%)	mortalities (%)	p-value
Acute appendicitis	33/37 (89.2)	5/37 (13.51)	6/37 (16.22)	0/37	0.09
Acute peritonitis	27/34 (79.41)	17/34 (50)	9/34 (26.47)	4/34 (11.76)	0.03
Intestinal obstructions	15/24 (62.5)	9/24 (37.5)	10/24 (41.67)	3/24 (12.5)	0.01

The average length of stay was 10.7 days ± 8 days with extremes of 0 and 33 days.

4. Discussion

During this study, we recorded a rate of 31.9% of digestive surgical emergencies. This incidence is higher than that reported by Magagi IA et al in Niger (22.87% on 2,720 cases) and Sima Z. A et al. in Gabon (25.5% 325 cases). [8, 9]. This difference between the frequencies of digestive surgical emergencies in these studies could be explained by the size of the samples and the geographical location of the structure concerned.

Several African authors report that emergencies in digestive surgery concern young adult males [10-12]. This result is consistent with our study (average age 30 years with a peak in the age group between 10 and 25 years (44.67%).

Abdominal pain was the most common reason for consultation in this study, as in several series [13-15]. However, its mode of onset depends on its mechanism; sudden pain suggests a serious pathology, very often surgical [16, 17].

Delay in consultation related to socio-economic and cultural factors and the attitude of certain clinicians has been reported by other authors [14, 18].

The x-ray ASP (55.34%) followed by ultrasound (32.04%) were the morphological examination requested in our patients, often necessary to allow us to confirm the diagnosis suspected in the clinical examination.

Radiological exploration of acute abdominal pain begins with unprepared abdominal images (ASP), this examination has thus become systematic and does not seem ready to lose its place. However, when peritonitis or occlusion is suspected, this examination takes a primordial place as reported in the literature [6, 19].

longer average time to treatment (15.4 hours) in our study was reported by Ahmed et al (18 hours) [4]. This could be explained by the time taken to carry out paraclinical examinations, the availability of blood products, the acquisition of the surgical kit which is the responsibility of the patient in our hospital center and the establishment of preoperative resuscitation, the duration of which depends on the clinical condition of the patient. However, Sima ZA et al. adds that the insufficient number and availability of personnel (stretcher-bearers, nursing staff, technicians from diagnostic support services) are frequently the cause of delays [9].

In our series as in other African series [15, 20], acute appendicitis and its complications occupy the first place in digestive surgical emergencies followed by acute intestinal occlusions.

Contrary to our study, intestinal obstruction is the leading cause of acute surgical abdomen in black Africa due to the high frequency of hernial strangulation and volvulus of the sigmoid colon [14, 21, 22].

According to several authors [15, 21-23], as in our study, acute generalized peritonitis results essentially from the complicated evolution of acute appendicitis, gastroduodenal ulcer disease and typhoid fever.

As in our study, strangulated hernia as the primary cause of OIA is the prerogative of young male subjects in African settings [2, 4, 19]. However, several authors report that patients with surgical pathologies that are a priori benign often only consult in the event of complications [1, 4, 6, 24].

Operative complications dominated by surgical site infection (18.45%) were related to poor operating conditions, the environment, and delayed consultation. This high rate of parietal suppuration is also described by other authors [9, 22, 23]. This complication is mainly encountered during peritonitis and acute intestinal obstruction, which contribute to lengthening the length of hospital stay.

The post-operative mortality rate (7.77%) linked to delayed admission and delayed treatment is lower than that of Zué SA et al (18.5%) [9]. Despite progress made in the field of resuscitation, surgery and increasingly appropriate antibiotic therapy, the causes of death reported in African series remain essentially septic shock, hypovolemic shock and multi-organ failure [20, 25].

5. Conclusion

Digestive surgical emergencies still constitute a major challenge in our context, the etiologies of which are largely due to acute appendicitis and its complications. Morbi-mortality remains high. The long consultation time and the low socio-economic level of patients are the main causes. The management of all cases of acute appendicitis and the surgical repair of simple hernias associated with patient awareness for early consultation could reduce this challenge.

Abbreviations

CRP	C-reactive Protein
F	Female
M	Male
N	Number
ASP	Plain Abdominal X-ray
SPSS	Statistical Software for Social Sciences
THB	Hemoglobin Level

Conflicts of Interest

The authors declare no conflict of interest.

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