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Non-Traumatic Abdominal Surgical Emergencies: Epidemiological, Clinical and Therapeutic Aspects in the Surgery Department at CMC Matam, Conakry (Guinea)

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Abstract

Introduction: The aim of this study was to contribute to improving the management of abdominal surgical emergencies in the General Surgery Department of the CMC Matam, Conakry (Guinea). **Methods:** This was a 5-year retrospective descriptive study (January 1, 2021-December 31, 2025) based on the records of patients admitted for abdominal surgical emergencies during the study period. **Results:** During the study period, 202 cases of non-traumatic abdominal surgical emergencies were collected, representing a hospital prevalence of 10.9%. The mean age was 22.7 ± 9.5 years. The male-to-female sex ratio (M/F) was 0.29. Abdominal pain (100%; n = 202) was the most frequent reason for consultation. The most common etiologies were acute appendicitis (85.6%; n = 173), followed by appendicular peritonitis (11.9%; n = 24). The most frequently used surgical approach was the McBurney incision (85.6%; n = 173), followed by the midline supra/sub-umbilical incision (3.5%; n = 27). Postoperative outcomes were uncomplicated in 98% of cases (n = 198). The mean length of hospital stay was 5.4 days. **Conclusion:** Among operated patients at CMC Matam, non-traumatic abdominal surgical emergencies were mainly represented by acute appendicitis. Further multicenter prospective studies are needed to better characterize the epidemiology of these emergencies.

Keywords

Surgical Emergencies, Non-Traumatic, Matam

1. Introduction

Abdominal surgical emergencies are abdominal pain conditions evolving over a few hours or days (less than three days), related to a surgical pathology requiring urgent treatment. These are abdominal conditions that, in most cases, can be fatal to patients if surgical intervention is not obtained within a normal timeframe [1].

They rank first among surgical consultations, ahead of urgent orthopedic surgery, and account for 20.5% of surgical activity. The most frequent etiology, by far, is acute appendicitis, followed by incarcerated hernias and biliary tract conditions [1].

In developing countries, the inadequate equipment of healthcare facilities and the lack of qualified personnel constitute a genuine obstacle to the management of digestive surgery in particular [2].

In these countries, these emergencies always occur in an unfavorable socioeconomic context, compounded by insufficient equipment in intensive care units and operating theaters, as well as a shortage of medical and paramedical staff [3].

The primary reason for consultation is acute abdominal pain, which is the main symptom and the cause of 40% of surgical interventions performed as emergencies. The leading etiologies are appendicitis, incarcerated hernias, and peritonitis [4] [5].

For the majority of patients, the diagnostic approach is based first and foremost on history-taking, clinical examination, and ancillary investigations [6].

The therapeutic options generated by medical advances and the development of medical imaging in developed countries have helped address the challenges posed by abdominal surgical emergencies, thereby contributing to their management [3].

In our context, emergencies are characterized by delayed consultation, lack of imaging, and absence of emergency technical resources.

The objective of this study was to contribute to improving the management of non-traumatic abdominal surgical emergencies in the Surgery Department of CMC Matam, Conakry.

2. Methods

This was a 5-year retrospective descriptive study conducted from January 1, 2021 to December 31, 2025, in the Surgery Department of CMC Matam, Conakry (Guinea). The study included all records of patients admitted and operated on in the department during the study period who had an up-to-date medical file. All cases of non-traumatic abdominal emergencies admitted to the department that did not receive surgical management were excluded. Variables were both qualitative and quantitative.

Consultation delay was defined as the interval between symptom onset and presentation to the hospital. Management delay corresponded to the interval between hospital admission and surgical intervention. Favorable outcome was defined as discharge without postoperative complications. Etiological diagnoses were estab-

lished from operative findings and the final diagnosis was recorded in the patient's medical record.

The preoperative assessment included clinical examination, complete blood count, blood grouping when necessary, and abdominal ultrasonography whenever available. Additional investigations were performed according to clinical indications.

This retrospective study was conducted after authorization from the administrative authorities of CMC Matam. Patient anonymity and confidentiality were respected throughout data collection and analysis. Only coded data were used for research purposes.

3. Results

During the study period, 1859 patients underwent surgery; of these, 202 were cases of non-traumatic abdominal surgical emergencies, representing 10.9% of the total.

The mean age of patients was 22.7 ± 9.5 years, ranging from 7 to 57 years. The 15–27 age group was the most represented (42.6%; n = 86). Women accounted for 77.2% (n = 156) with a sex ratio of 0.29. The most frequent occupational category was students/pupils (59.4%; n = 120). The mean consultation delay was 29.8 hours, ranging from 4 to 71 hours. Abdominal pain was the main reason for consultation (100%), followed by cessation of bowel movements and gas in 12.9% (n = 26) and vomiting in 9.9% (n = 20). Physical signs were dominated by abdominal guarding in 85.6% (n = 173) of cases. Clinical signs are summarized in Table 1.

Table 1. Frequency of clinical signs.

Clinical Signs	Number (n = 202)	Percentage
Reasons for Consultation		
Abdominal pain	202	100.0
Cessation of bowel movements and gas	26	12.9
Nausea/vomiting	20	9.9
Painful swelling	2	1.0
Abdominal bloating	1	0.5
Physical Signs		
Blumberg's sign	173	85.6
Abdominal guarding	173	85.6
Abdominal rigidity	24	11.9
Irreducible painful swelling	2	1.0
Abdominal distension	2	1.0
General Signs		
Fever	82	40.6
Asthenia	14	7.0

The etiologies were represented by acute appendicitis in 85.6% (n = 173) of cases, followed by appendicular peritonitis in 11.9% (n = 24) of cases. See Table 2.

The mean management delay was 17.1 ± 11.2 hours. Adjuvant medical treatment consisted of fluids, antibiotics, and analgesics. General anesthesia was performed in all patients (100% of cases). The McBurney incision was the most frequently used surgical approach (85.6%; n = 173).

Surgical procedures consisted of appendectomy in 97.5% (n = 197) of cases. See Table 3.

Outcomes were favorable in 98% (n = 198) of cases. Morbidity of 2% (n = 4) was recorded. These complications consisted of 2 cases of postoperative peritonitis and 2 cases of surgical site infections. The mean length of hospital stay was 5.3 ± 3.1 days, ranging from 1 to 21 days.

Table 2. Distribution of patients according to etiology.

Etiological Diagnosis	Number (n = 202)	Percentage
Acute appendicitis	173	85.6
Appendicular peritonitis	24	11.9
Incarcerated hernia	2	1.0
Acute intestinal obstruction	2	1.0
Ruptured ectopic pregnancy	1	0.5

Table 3. Frequency of surgical procedures.

Surgical Procedures	Number (n = 202)	Percentage
Appendectomy	197	97.5
Peritoneal lavage + drainage	24	11.9
Hernia repair (Bassini technique)	2	1.0
Adhesion resection	2	1.0
Adnexectomy	1	0.5

4. Discussion

Abdominal surgical emergencies are conditions frequently seen in emergency departments. Their management can be challenging due to the severity of the pathology or local management conditions [7]. These emergencies are relatively frequent in our context. Gaye *et al.* (2016) in Senegal reported 20% of non-traumatic abdominal surgical emergencies [8]. The relatively high frequency in our context is explained by the fact that our study was conducted in a fourth-level hospital in the national health pyramid, meaning that most emergency cases are referred to higher-level hospitals with specialized departments.

In this study, young patients were the most affected. This result is consistent with those reported by several African series [9] [10]. In contrast, it differed from

those reported in Western countries with higher mean ages [11] [12]. This situation is related to the etiologies (appendicitis) found in this study, which predominantly affect young people.

It should also be noted that Africa is characterized by a large young population, whereas the Western population is older. Furthermore, this age group is the most active and often exhibits risk-taking behaviors. Female patients were the most represented.

Our results were comparable to those of Perry *et al.*, who reported a female predominance of 184 cases, representing a proportion of 50.1% [13]. However, they differed from those reported in the literature, which indicates a male predominance [14] [15]. Regarding occupation, students/pupils were the most represented group. A similar finding was observed in Cameroon in 2020, where students and pupils accounted for the largest proportion of cases, representing 30% of the total.

Abdominal pain was the most frequently encountered reason for consultation, followed by cessation of bowel movements and gas. Soumah *et al.* in Senegal reported that the reason for consultation was abdominal pain (100%) followed by vomiting (90.90%) [16]. Acute appendicitis constituted the main etiology. Our results corroborate those reported by several authors [16] [17]. This is related to the level of qualification of the study hospital.

The most frequently used surgical approach was the McBurney incision, followed by the midline supra/sub-umbilical incision. Ananivi *et al.* in Togo reported that surgical management was predominantly performed via the McBurney incision (35.27%) and the xipho-pubic midline approach (34.02%) [18]. The type of anesthesia used in our study was similar to that of Daddy *et al.*, who reported that the majority of patients were operated under general anesthesia in 96.56% of cases [19]. In contrast, they differed from those of Gbessi *et al.* in Benin, who reported that spinal anesthesia was the most commonly used technique [20].

The predominance of female patients observed in this study differs from that reported in most African series. This difference may reflect local recruitment patterns and deserves further investigation.

Surgical procedures consisted of appendectomy, followed by peritoneal lavage and Douglas pouch drainage. These procedures are consistent with the etiologies found in this study. The mean length of hospital stay was comparable to that found by Kambiré *et al.*, who noted a mean hospitalization duration of 6 days [21]. However, Paluku Katswere *et al.* reported a longer mean hospital stay than ours, at 6.8 ± 4.04 days [22]. This is explained by the lower number of postoperative complications observed in our study and the high frequency of acute appendicitis.

This study has some limitations. Its retrospective and single-center design may limit the generalizability of the findings. Only operated patients with complete medical records were included, which may have introduced selection bias. Patients managed non-operatively were excluded, and some variables could not be fully assessed because of incomplete documentation.

5. Conclusion

Among operated patients at CMC Matam, non-traumatic abdominal surgical emergencies were mainly represented by acute appendicitis. Further multicenter prospective studies are needed to better characterize the epidemiology of these emergencies.

Conflicts of Interest

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

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