



## Prevalence of digestive surgical emergencies at the Amissa Bongo Regional Hospital in Franceville

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### Abstract

*The objective of this work is to study the prevalence of digestive surgical emergencies in the surgical department of the Amissa Bongo Regional Hospital in Franceville, Gabon. This was a descriptive retrospective study of patients operated on for digestive surgical emergencies over a four-year period (September 2015 to August 2019).*

*During the study period, 451 digestive emergencies were operated on. The mean age was  $35.32 \pm 15.24$ . The most common digestive emergency was peritonitis (30.82%). The 15-30 age group was the most affected (37.92%). Appendicitis with a frequency of 19.73% ( $n = 89$ ) was the second most common emergency with a high frequency in men. Acute bowel obstruction accounted for 14.19% ( $n = 64$ ) of abdominal emergencies. Patients from Franceville were the most represented with 48.3%, followed by those from Moanda with a frequency of 23.7%, then from Koulamoutou (7.22%) and Okondja (5.64%). Digestive surgical pathologies exist in our environment. An early diagnosis would improve care to reduce morbidity and mortality in our region.*

**Keywords:** Prevalence, emergencies, surgical, digestive, regional hospital, Franceville Gabon.

### Introduction

Emergencies in digestive surgery constitute an important part of the activities of the surgical department. A prerogative of all ages, the acute surgical abdomen has several aetiologies and still poses a problem of care, especially in Third World hospitals. In south-eastern Gabon, the Amissa Bongo hospital in Franceville regularly receives patients from the Haut Ogooué province and sometimes those from Ogooué Lolo province. The medico-surgical emergency department accommodates digestive surgical emergencies. The young, active and disadvantaged population

remains the most affected in certain regions, which makes it a real public health problem <sup>[1,2,3]</sup>.

The place and issues of digestive surgical emergencies in Gabon are not well known. We have therefore taken the liberty of initiating this work, a first in our hospital environment. It extended from September 2015 to August 2019. The main objective of this work is to study the prevalence of digestive surgical emergencies in the surgical department of the Amissa Bongo Regional Hospital in Franceville.

### Patients and Methods

This was a descriptive retrospective study conducted over a period of four years (September 2015 to August 2019).

The framework of our study was the Amissa Bongo Regional Hospital of Franceville which is located in the city of Franceville, capital of the Haut-Ogooué province, itself located in the South East of the Gabonese Republic,

All patients who underwent a laparotomy for emergency digestive surgery were included. The digestive surgical emergency was defined as any emergency in visceral surgery (all ages combined), including infectious emergencies (peritonitis, acute appendicitis, anoperineal suppuration), acute intestinal obstructions, hemorrhoidal thromboses, abdominal wounds, closed abdominal trauma, Anorectal trauma and other digestive ailments requiring emergency surgery. The acute abdomens that were not operated on or died preoperatively were excluded. Data was collected from emergency department consultation registers, patient files and operating theater report registers.

### Data analysis

The following parameters were analyzed: age, sex, geographic origin and the pathologies encountered. For the data analysis, we used the software from Epi info.3.5.4. We did the usual descriptive statistics.

### Results

During the study period, 1560 patients were treated in the surgical emergency department of the Amissa Bongo Regional Hospital in Franceville, among whom we identified 451 digestive surgical emergencies, which represented 28.91%. The mean age was  $35.32 \pm 15.24$  years (range: 4 to 95 years). The male sex was predominant (62.52%). The age group from 15 to 30 years was the most represented with a frequency of 37.92% (n = 171), followed by the group from 45 to 60 years with 22.17% (n = 100)

and that 4 to 15 years with 16.85% (n = 76), however, the oldest patients were the least represented in this study with a frequency of 4.88% (Table 1).

The Amissa Bongo hospital in Franceville is a regional hub in the south-east of Gabon, in our study, patients from Franceville were the most represented with 48.3%, followed by those from Moanda with a frequency of 23.7%, then Koulamoutou (7.22%) and Okondja (5.64%). Patients from localities such as Nguouoni (2.71%), Akiéni (2.71%), Sucaf (3.39%), Bongoville (1.13%), Mounana (2.26%), Bakoumba (0.68%), Lastourville (1.58%) and Mvengué (0.68%) were the least represented in this study (Figure 1).

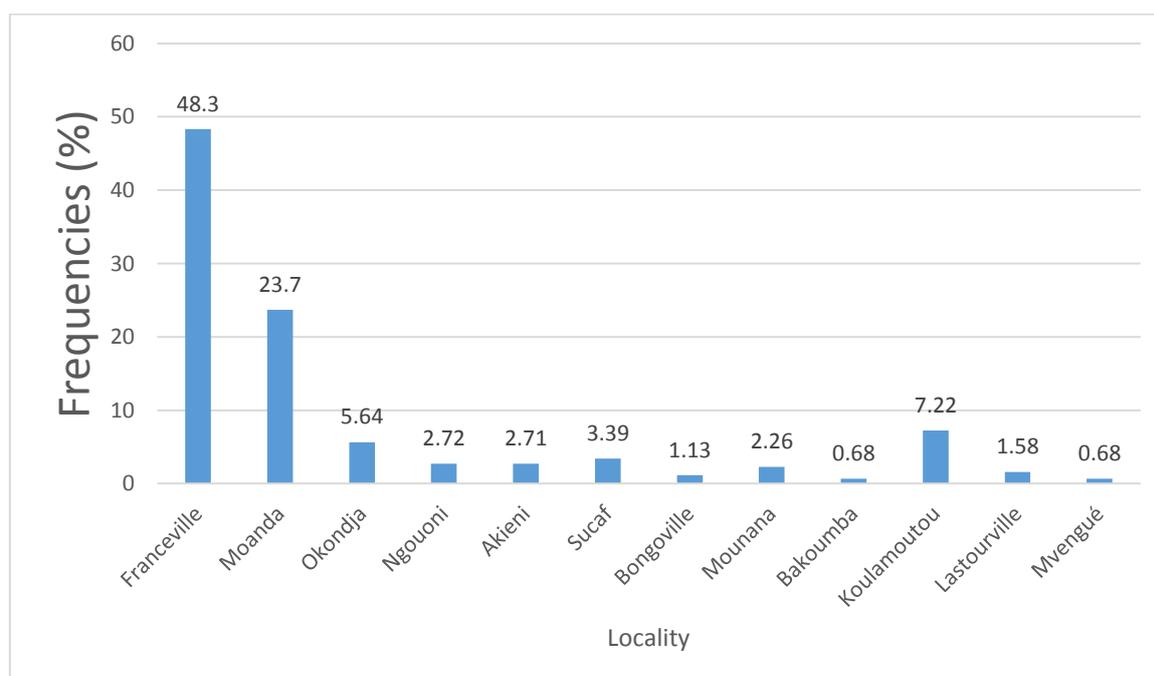
In our study, the most common digestive surgical emergency was peritonitis (30.82%), which represented 139 cases. Peritonitis was the prerogative of the young subject, with a mean age of 21.52 years (range: 4–52 years). The 15-30 age group was the most affected (44.21%). Appendicitis with a frequency of 19.73% (n = 89) is the second most common emergency with a high frequency in men. Acute bowel obstruction (AIO) accounted for 14.19% (n = 64) of abdominal emergencies. The affected population was predominantly male, with a sex ratio of 4 and an average age of 30.50 years. Table 2 illustrates the different digestive surgical emergencies. Strangulated hernia was the fourth leading cause of digestive surgical emergencies with 9.75% (n = 44). Closed abdominal trauma concerned 27 patients (5.99%), mainly 85.85% male (n = 23/27). Hemorrhoidal thrombosis was also represented with a frequency of 5.32% or 24 patients. The other diagnoses were dominated by Fournier's gangrene (1.55%), intussusception (0.66%), post traumatic spleen rupture (1.99%), abdominal wounds (4.21%), anorectal trauma (1.80%) and anoperineal suppurations (1.99%).

**Table 1:** Distribution of patients by age group and sex

Age group	Sex		Total workforce (frequency)
	Female	Male	
[4 -15[	30	46	76 (16.85%)
[15-30[	69	102	171 (37.92%)
[30-45[	22	22	44 (9.76%)
[45-60[	30	70	100 (22.17%)
[60-75[	11	27	38 (8.42%)
[75-95]	7	15	22 (4.88%)
Totals	169	282	451 (100%)

**Table 2:** Distribution of the various abdominal surgical emergencies.

Digestive surgical emergencies	Workforce	Frequencies (%)
Peritonitis	139	30.82
Acute appendicitis	89	19.73
Strangulated hernia	44	9.75
Acute bowel obstruction	64	14.19
Hemorrhoidal thrombosis	24	5.32
Fournier's gangrene	7	1.55
Intussusception	3	0.66
Post-traumatic spleen rupture	9	1.99
Abdominal wound	19	4.21
Closed abdominal trauma	27	5.99
Anorectal trauma	6	1.33
Anoperineal suppuration	9	1.99
Other	11	2.43
Total	451	100



**Figure 1:** Distribution of patients by locality

## Discussion

Urgent digestive surgery is a frequent reason for consultation and admission. Many authors agree that the surgical acute abdomen accounts for most of the activity of the visceral surgeon in Africa<sup>[4,5]</sup>. The young population, mainly male, is a characteristic found in the African series<sup>[3,5]</sup>. This is a reflection of our demography where the age pyramid is broad based. In the West, on the contrary, where the population is aging, we find higher average ages<sup>[6]</sup>.

Appendectomy and ileostomies are the surgical procedures commonly performed in Africa and most often by laparotomy<sup>[5, 6]</sup>. Vester-Andersen et al.<sup>[7]</sup>, in Denmark, in 2014, reported 53.2% of interventions on the intestinal sphere performed 93.2% by laparotomy and only 6.8% of laparoscopies, but his study had initially excluded all appendectomies. Laparotomy is still the essential first step in the surgical acute abdomen. The suspected typhoid appendicular perforation was the primary etiology of peritonitis in our patients. In our regions, typhoid fever is rife with an endemic epidemic, as in other developing countries of sub-Saharan Africa<sup>[8,9, 10]</sup>. Afridi et al.<sup>[11]</sup> in Pakistan found peptic ulcer perforation as the main etiology of peritonitis, with mean ages of 36.8 and 40.5 years respectively and male predominance. Doklestić et al.<sup>[12]</sup> in Serbia also blamed peptic ulcer as the main source of secondary peritonitis, but the average age of its population was higher with 63.7 years and 54.41% of women. Strangled hernia, the leading cause of acute bowel obstruction, is the prerogative of young men in Africa<sup>[1,3]</sup>. South of the Sahara, patients with a priori benign surgical pathologies often only consult in the event of complications<sup>[5]</sup>. The management of a simple hernia could greatly reduce the prevalence of strangulations, sources of intestinal necrosis linked to these complications. Simple appendicitis is one of the most frequent aetiologies in emergency digestive surgery<sup>[1]</sup>. Appendicitis in the complication stage is generally more frequent in our context due to the delay in consultation as reported by other African

studies<sup>[3]</sup>. Abdominal trauma affects young males. They are mostly caused by road accidents (AVP), assault and battery, followed by animal attacks (the majority of patients live in rural areas), and the spleen is the organ most involved<sup>[13]</sup>. The Nigerian study by Ahmed et al. in Zaria<sup>[8]</sup> there is also a young population strongly affected by AVP, but also by the growing phenomenon of attacks by firearms. Septic complications were linked to poor operating conditions (non-compliant operating theater, peritoneal washing with running water), delayed consultation and undernutrition in our patients. In our context, peritonitis was a major contributor to parietal suppurations and septic shock as demonstrated by Riché et al.<sup>[14]</sup> in their study establishing a direct causal link between infectious peritoneal contamination and the occurrence of septic shock. In our study, patients from Franceville were the most represented with 48.3%, followed by those from Moanda with a frequency of 23.7%. This work corroborates that in Dakar by Ndour et al.<sup>[15]</sup> where the greatest number of patients came from the suburbs of Dakar (65% of cases) following the absence of pediatric surgery units in several hospitals and those originating from the interior regions of the country accounted for only 25% of cases. They explain it by a lack of appropriate means of evacuation. The lack of adequate transport for the evacuation of pathological patients from the territories of the interior of the province as well as the ignorance of these pathologies by certain practitioners in the hospitals of the interior of the province would be at the base of a weak periphery transfer rate.

## Conclusion

Abdominal surgical emergencies managed in the surgical department of the Amissa Bongo Regional Hospital in Franceville are dominated by peritonitis, followed by acute appendicitis, acute bowel obstruction (AIO) and strangulated hernia. They are marked by a delay in consultation and support.

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