

## Early Interventions in Visceral Surgery: Indications and Results at the Kankan Regional Hospital

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### Abstract

**Introduction:** The aim of this study was to investigate the indications and results of early reinterventions in individuals of the abdomen in the general surgery department of HRK.

**Material and Methods:** This was a one-year prospective study, carried out in the Surgery department of the Kankan Regional Hospital, focusing on early re-interventions regardless of the location of the intervention.

**Results:** During this period, we operated on 1075 patients, among whom 38 cases required re-laparotomies, representing 3.53%. The average age of our patients was 29.68 years, with extremes of 7 and 75 years, mainly affecting individuals aged between 16-25 years, with a predominance of males. The majority of these patients were initially operated on in private clinics (60.53%) by unqualified personnel (76.32%). Appendicitis was the most involved condition, accounting for 44.73%. Peritonitis (68.42%) followed by digestive fistulas (18.42%) were the main postoperative indications. Clinical signs were dominated by abdominal pain. The main re-intervention procedures were peritoneal lavage (92.11%), drainage (81.58%), release of adhesions or bands (31.58%), and resection + anastomosis (26.32%). We recorded a mortality rate of 23.68%.

**Conclusion:** Better management of initial pathologies through the strengthening of surgical teams' skills, raising awareness and banning unqualified personnel from health centers, and improving technical facilities could contribute to a better prognosis.

**Keywords:** Early re-interventions; visceral surgery; indications; results; regional hospital; Kankan

### Introduction

Early reoperation in visceral surgery refers to re-laparotomy by opening the abdomen performed during the immediate postoperative period after a laparotomy and causally linked to the first operation within 30 days of the first operation [1].

The need for reoperation in the postoperative period remains not only a great dilemma for the surgeon, but also a crucial challenge for the patient to undergo a new operation within a period of time [2]. It is necessary when the patient's clinical condition deteriorates or does not improve after the first procedure. The diagnosis depends from one structure to another according to the clinical and paraclinical means of investigation available, not to mention the experience and qualification of the operator [3]. In addition, the

prognosis depends on early diagnosis and timely intervention [4]. They represent a real public health problem; its frequency varies from one country to another [5]. Approximately 27% of patients undergo reoperation worldwide [6]. In Ethiopia: In 2020, a retrospective review of medical records from the Hospital Millennium Medical College of Saint Paul noted a frequency of 17.2% [7]. In Guinea: in 2019, Mamy GF [8] collected 79 cases of reoperation out of a total of 3240 patients operated on in the General Surgery Department of the University Hospital of the Ignace Deen National Hospital in Conakry.

The aim of this study was to investigate the indications and outcomes of early reoperations in abdominal surgery patients in the HRK surgery department.

**Material and methods**

This was a prospective descriptive study lasting twelve (12) months from April 1, 2022 to March 31, 2023 on all patients who underwent early resurgery of the abdomen during the study period.

We included in the study, all patients whose records were correctly completed in whom early abdominal surgery was performed 30 days after the 1st operation, regardless of the location of the operation.

We excluded all patients who had reoperated abdominal surgery and who did not agree to participate in our study. Patient recruitment was exhaustive, taking into account all patients who met our inclusion criteria during the study period.

The variables studied were qualitative and quantitative, divided into epidemiological, clinical, paraclinical and therapeutic data. These data were analysed by the Epi-info 7.2 software.

- For qualitative variables, we determined the proportions (prevalence) estimated as a percentage (%) with calculation of a ratio for sex.
- For the quantitative variables, we divided them into classes, the calculation of the mean, the standard deviation, the median and then identified the minimum and the maximum.

From an ethical point of view, the data was collected anonymously from a survey sheet drawn up in a smartphone. Confidentiality was a matter of principle. The inadequacy of the technical platform was the main difficulty.

**Results**

Out of a total of 1075 operated on in 12 months, there were 38 cases of relaparotomies, or 1.05%. The mean age of patients was 29.68 ± 15.35 years and ranged from 7 to 75 years. The majority age group affected was 16-25 years and 26-35 years, i.e. 39.5% (n=15) and 26.3% (n=10) respectively (Table 1).

<i>Age range (years)</i>	<i>Staff</i>	<i>Percentage</i>
[≤ 15]	4	10,5
[16 - 25]	15	39,5
[26 - 35]	10	26,3
[36 - 45]	3	7,9
[46 - 55]	3	7,9
[56 - 65]	2	5,3
[66 - 75]	1	2,6
Total	38	100
<b>Average age: 29,68 ± 15,35 ans      Extreme: 7 and 75 years old</b>		

**Table 1:** Distribution of patients by age.

A male predominance of 60.53% (n=23) was noted in the study, i.e. a ratio of 1.53. The study showed that more than half of the patients resided in rural areas, 55.3% (n=21) and 44.7% (n=17). The most affected socio-professional strata were housewives and farmers (28.95%) (n=11) each. The majority of patients who underwent reoperation came from private practices 60.5% (n=23).

The majority of patients were operated on by general practitioners acting as surgeons 76.32% (n=29), nurses 13.16% (n=5) and only 4 cases (10.53%) were operated on by specialist surgeons (Table 2).

Pathology/type of surgery	Qualification of the 1st operator			
	Generalist n (%)	Nurses n (%)	Surgeon and Gynecologist n (%)	Total n (%)
Appendicitis/Appendectomies	12(39,5)	03(7,89)	00	15(39,5)
Typhoid peritonitis/intestinal suture	06(15,78)	00	03(7,89)	09(23,7)
Hernia cure	05(13,16)	02(5,3)	00	07(15,4)
Fetal Suffering/Caesarean Section	03(7,89)	00	01(2,6)	04(10,53)
Liver abscess/drainage	02(5,3)	00	00	02(5,3)
Ovarian cyst/cystectomy	01(2,6)	00	00	01(2,6)
Total	29(76,32)	05(13,16)	04(10,53)	38(100)

**Table 2:** Distribution of patients according to the qualification of the 1st operator and the pathology operated on Concerning the site or the initial pathologies, most of the 1st operations concerned the appendix (appendectomies), the small intestine (typhic peritonitis) and the anterolateral wall of the abdomen (hernia treatment).

Clinical examination of patients showed that the main indications were postoperative peritonitis 68.4% (n=26), intestinal fistula 18.4% (n=7) and postoperative occlusion 7.9% (n=3) (Table 3).

Indications for reoperations	Staff	Percentage
Postoperative peritonitis	26	68,4
Fistule digestive	7	18,4
Postoperative occlusion	3	7,9
Evisceration	1	2,6
Eversionation	1	2,6
Total	38	100

**Table 3:** Distribution of patients according to the indications for reoperations.

The majority of reoperations were done between the 7th and 14th days of their arrival in our department 42.11% (n=16), before 7 days 31.58% (n=12) with extremes of 3 to 30 days (Table 4). After the 1st operation, the persistence or occurrence of abdominal pain 89.47% (n=34), the occurrence of fever 50% (n=19), the cessation of transit 47.37% (n=18), an abdominal defense of fecal fluid leakage 18.4% (n=7) were the main reasons for admission, readmission and reoperation of patients.

Delay between the 1st and the reoperation	Staff	Percentage
< 7 days	12	31,58
7 - 14	16	42,11
≥ 15	10	26,32
Total	38	100

**Table 4:** Distribution of patients by time to reoperation.

Abdominal ultrasound was performed by very few of our patients and showed diffuse intraperitoneal effusion. In the operating room, we sutured the perforations 44.74% (n=17), the release of adhesions 31.58% (n=12), the resection and anastomosis 26.32%, and drainage in our patients. All patients received medical care consisting of rehydration, antibiotic therapy (Metronidazole, Ceftriaxone or Ampicillin) the main analgesic was paracetamol, tramadol.

The mean length of stay for our patients was  $14.36 \pm 8.82$  days with extremes of 1 to 48 days. Forty-four point seventy-four percent came out between the 8th and 14th days; and 28.9% were discharged in the 3rd week. We noted a cure rate of 76.32% (n=29) and 23.68% (n=9) deaths.

## Discussion

During this period, we consulted 3585 patients, 1075 of whom had undergone surgery, of which 38 cases of relaparotomies, i.e. 3.53% met our selection criteria, a frequency of 1.05%. This represented 3.16 cases per month of all abdominal surgical procedures. The hospital frequency of reoperations is not the same as that of Mamy GF [8] in 2019 in Guinea, which recorded 79 cases, or 2.44%. The mean age of patients was  $29.68 \pm 15.35$  years and ranged from 7 to 75 years. The age group mainly affected was 16-25 years old. A male predominance of 60.53% was noted in the study with a sex ratio of 1.53.

This would be explained by the fact that most of these pathologies reported in this study are observed in men. Mounika M [11] in 2022, in a study to evaluate relaparotomies in the general surgery department of the government hospital, reported that men were the most affected. Similarly, Enderes J [12] in 2022 in Germany observed that most patients were men, i.e. 61%.

The study showed that more than half of the patients resided in rural areas. The lack of specialists in these areas would explain this state of affairs. A five-year retrospective review led by Negussie T [13] in 2018 in Ethiopia noted that 58.5% of patients lived outside Addis Ababa. The most affected socio-professional stratum were housewives and farmers. Ali AM [1] in his study on relaparotomies involving gastrointestinal surgery in 2021 in Kenya reported a predominance of peasants in 46.3%.

The majority of patients who underwent reoperation came from private practices. This result would be justified by the massive presence of clandestine practices on the one hand and the lack of specialist or competent surgeons on the other hand in these structures providing complications.

Ugumba CS [4] in the Democratic Republic of Congo in 2022, concluded that 86.39% of patients came from outside the Lubumbashi University Hospital.

The majority of patients were operated on by general practitioners who act as surgeons followed by nurses. Ugumba CS [4] in the Democratic Republic of Congo reported that the 1st interventions were carried out by unskilled operators 60.71%.

Concerning the breach, most of the 1st interventions concerned the appendix and the groin region. Indeed, these are the most frequent pathologies observed in practice in visceral surgery. Munihire JB [14] in 2022 in Uganda, in its study on morbidity and mortality and risk factors for relaparotomies at Charité Hospital found that the majority of these patients were operated on for the first time for acute peritonitis and intestinal obstruction in 40% and 26.67% respectively.

At the end of the clinical examination, the main indications were peritonitis, fistulas and intestinal obstructions. The recent proliferation of clandestine health facilities in our country and the lack of training of staff could partly justify this high rate of reoperations. A study carried out in Guinea by Mamy GF [8] in 2019 came to the same conclusion. Reoperations were performed between the 7th and 14th days of their arrival in our department in the majority of cases. This interval depends on the speed of the onset of the complication, its severity and especially the promptness of the surgical team to make the diagnosis and indication of a relaparotomy.

After the first operation, the persistence or resumption of abdominal pain and fever motivated most patients to visit our department. This condition is thought to be due to the spread of the infection in the abdominal cavity. Sidibé K [10] in Mali in 2023 found that 44% of these patients had mentioned abdominal pain in the general surgery department of the Gabriel Touré University Hospital in Bamako.

The physical examination revealed in the majority of our patients abdominal defense followed by abdominal bloating and leakage of fecal fluid through the operative wound. More than half of our patients have been diagnosed with appendicitis and peritonitis for the first time. Significantly, there was a case of stomach tumor. Indeed, these are the most common pathologies observed in visceral surgery. At St George's Department of General Surgery in England in 2021, Soliman H [7] reported that these patients were diagnosed with acute appendicitis for their first procedures.

Abdominal ultrasound was performed by very few of our patients and showed diffuse intraperitoneal effusion. The low socio-economic level and the low contribution of ultrasound in the diagnosis of reoperation would explain this result. A study by the sub-region, particularly Cameroon, Tonye TA [5] on Early Postoperative Complications in District Hospitals of the City of Yaoundé in 2015 mentioned a low rate of ultrasound performance by these patients, i.e. 4.25%.

In the operating room, we have generally performed a peritoneal wash, drainage combined with suturing of the perforations in most of our patients. This result could be explained by the septic state of the contents due to complicated appendicitis, which was the major cause of the first interventions. In Germany, Enderes J [12] in 2022 observed that drainage was the most performed procedure in the operating room with 42%.

Compared to the number of reoperations for the surgical management of our patients, we needed only one reoperation in almost all cases to correct early complications. This situation is due to the management of these cases by a specialist in visceral surgery in the department. In India in 2017, Singh P [9] in an analysis of 50 cases observed that 70% of these patients did not need a single reoperation.

The simple post-operative effects were simple. The precocity of specialized care associated with a more appropriate postoperative follow-up would justify this recovery rate of 81.57%. In India, in 2022, Mounika M [11] mentioned a mortality rate of 0.18% in the general surgery department of the government hospital. In our context, the high mortality rate would be justified by the delay in care and the inadequacy of the technical platform.

In Guinea, Mamy GF [8] in 2019 reported that immediate postoperative follow-up was simple in 63.29% of cases.

The average length of stay for our patients was  $14.36 \pm 8.82$  days. This could be explained by the fact that some of our patients received late in the septic shock phase benefited from resuscitation sessions before their operation. Enderes J [12] in 2022 observed an average duration of  $3.26 \pm 7.2$  days, i.e. 42% of these cases.

## Conclusion

This study showed a high frequency of reoperations leading to significant morbidity and mortality in the department. This frequency of early reoperations is linked to the proliferation of clandestine clinics and the inadequacy of the technical platform. Reoperations are much more indicated in early post-operative complications such as: peritonitis, fistula. Better management of initial pathologies through the strengthening of the skills of surgical teams, the improvement of the technical platform, and the regulation of clinical practice could contribute to a better prognosis.

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