

Post-operative Peritonitis: Etiological Aspects and Management at the Kankan Regional Hospital

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Received: August 04, 2024; **Published:** September 04, 2024

Abstract

Introduction: this study aimed to investigate the aetiological aspects and management of postoperative peritonitis in the surgical department of the Kankan Regional Hospital.

Methodology: this was a 12-month prospective, analytical study of postoperative peritonitis regardless of the location of the initial operation.

Results: out of 737 operations, 50 cases were postoperative peritonitis accounting of 6.78%. The average age was 20.42 years. Women were the most affected (54%). Housewives accounted for 38% and rural women 54%. The initial operation was conducted in private clinics (46%) and health centers (30%). Appendicitis was the initial pathology in 56% of cases, and general practitioners and nurses were the first operators in 64% and 26% of cases respectively. Removal of the appendicular stump was performed by 56% of patients. The operation lasted an average of 95.74 minutes. Follow-up was straightforward in 78% of cases. The average length of stay was 16.4 days. The case fatality rate was 16%.

Conclusion: postoperative peritonitis was frequent and serious. A multicentre study would be necessary to collect data on the aetiological aspects and management.

Keywords: Peritonitis; Post-operative; Hospital; Regional; Kankan

Introduction

Postoperative peritonitis corresponds to an infection of the peritoneal cavity during a previous planned or urgent abdominal surgery [1].

They are usually the result of three aggressions, namely the initial pathology, the first intervention and the intra-abdominal infectious complication and usually after a rupture of the barrier of the intestinal tract secondary to either an anastomotic or ischemic disunion or other forms of damage to the integrity of the gastrointestinal wall [2].

Digestive fistula due to suture or anastomosis disunion, intestinal necrosis, infection of a subhepatic or residual collection are the main etiologies. Not to mention the duration of the procedure as well as local infection and obesity [3].

Factors to be taken into account in the occurrence of postoperative peritonitis include: interventions performed in a septic context, local conditions, the difficulty of the surgical procedure and the experience of the operator [4].

The diagnosis is often marked by the onset of fever during abdominal surgery, isolated or associated with abdominal or extra-abdominal manifestations and more or less marked signs of sepsis, at least in the initial phase [5].

It is a serious complication encountered in all types of abdominal surgeries with mortality ranging from 36% to 44% worldwide in 2022 [6].

In Poland in 2021, the frequency of postoperative peritonitis was 38.27% with a mortality of 18.4% at the Ivano-Frankivsk Regional Council Clinic [7].

In Burkina Faso: in 2013, Ouangre E [8] at the regional hospital center of Dédougou mentioned that PPOs represented 31.2% of all abdominal emergencies in the regions of Yalgado. The aim of this work is to study the etiological aspects and management of postoperative peritonitis at the general surgery department of the Kankan regional hospital.

Material and methods

This was a prospective descriptive and analytical study lasting twelve months from August 1, 2021 to July 31, 2022 on all patients admitted to the department for PPO. *We included* in the study all patients regardless of gender, origin operated on in the department for postoperative peritonitis, regardless of the location of the initial operation and who agreed to participate in the survey during the study period. Patients for whom records were unusable and who refused to participate in the study were excluded from the study. We conducted a comprehensive recruitment of all patients who met our inclusion criteria during the study period. Our study variables were qualitative and quantitative, divided into epidemiological, clinical, paraclinical and therapeutic data.

Results

Of the 737 laparotomies performed in the general surgery department of the HRK, the diagnosis of postoperative peritonitis was retained in 50 patients, who underwent surgical reoperation, i.e. a hospital frequency of 6.78%.

We found 52% of patients included for PPO whose age ranged from 7 to 26 years with a mean age of 20.42+ 15.44 years. The extreme ages were 7 and 64 years. The female sex was the most affected with a sex ratio of 0.85.

Housewives and the socio-professional stratum composed of pupils and students were the most represented with 19 cases (38%) and 14 cases (28%) respectively. For the most part, these patients came from rural areas, 27 cases, or 54%, and the others from urban municipalities in the various prefectures of the region.

Location of the initial intervention	Staff	(%)
Private Clinics	23	46
Health Centers	15	30
Hôpital Régional de Kankan		
Surgery Department	7	14
Maternity Department	5	10
Total	50	100

Table 1: Distribution of patients by location of initial procedure.

<i>Diagnostic initial</i>	<i>Staff</i>	<i>(%)</i>
Appendicitis aigue	28	56
Inguinal/umbilical hernie	7	14
Liver abscess	5	10
Cyst of ovaren	4	8
Scarred uterus	3	6
Other	3	6
Total	50	100

Table 2: Distribution of patients by initial diagnosis.

Others: Perforating stab wound, uterine fibroid, Caesarean section for large fetus.

<i>Initial Operator Qualification</i>	<i>Staff</i>	<i>(%)</i>
Physicians acting as surgeons	32	64
Nurses	14	28
Gynecologists	4	8
Total	50	100

Table 3: Distribution of patients according to operator qualification.

The abdominal ultrasound performed showed effusion in 15 patients (30%), hemoperitoneum in 2 patients (4%) and liver abscess in 1 case (2%).

ASP was performed in 3 patients including 2 cases of pneumoperitoneum 4% and hydroaeric levels in one patient. All patients were operated on under general anesthesia and the upper and lower umbilical median route was the most practiced, 42 cases or 84%.

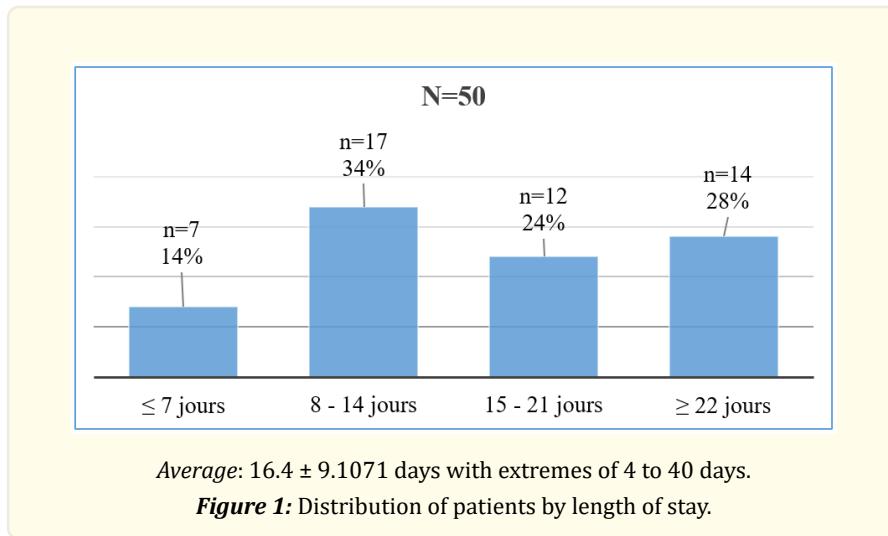
The mean duration of patient reinterventions was 95.74 ± 24.64 minutes with extremes of 60 and 180 minutes.

<i>Etiologies</i>	<i>Actual</i>	<i>(%)</i>
Loosening of appendicular stump sutures	25	50
Ileal perforation	10	20
Subphrenic abscesses	6	12
Loosening of sutures on the uterus	4	8
Ileal necrosis	3	6
Douglas fir abscess	2	38
Total	50	100

Table 4: Distribution of patients by etiology.

<i>Gesture made</i>	<i>Workforce (N=50)</i>	<i>(%)</i>
Peritoneal Toilet	50	100
Suturing of breaches	33	66
Intestinal Resection/Anastomosis	17	34
Stoma	3	6

Table 5: Distribution of patients by procedure performed.



Prognostic factors	Postoperative (n = 50)		P-value
	Complicated	Simple	
Medical ATCD			
Typhoid fever		7 (100%)	
Gastric ulcer	1 (12,50%)	2 (87,50%)	
Syphilis		2 (100%)	
Amoebiasis	0	2 (100%)	
Length of stay			0,0161
≤ 7 days		7 (100%)	
8 - 14 days	3 (17,65%)	14 (82,35%)	
15 - 21 days	3 (25%)	9 (75%)	
≥ 22 days	3 (21,43%)	9 (78,57%)	

Table 6: Distribution of patients according to prognostic factors.

Cause of death	Actual	(%)
Effect of General Anesthesia	4	50
Sepsis shock	3	37,5
AOP	1	12,5
Total	8	100

Table 7: Distribution of Patients by Cause of Death.

Discussion

Of the 737 laparotomies performed in the general surgery department of the HRK, the diagnosis of post-operative peritonitis was retained in 50 patients who underwent surgical reoperation, i.e. a hospital frequency of 6.78%. Our data are approximately identical to those of a study led by Marano A [9] who collected 5% postoperative peritonitis.

The average age was 20.42 ± 15.44 years. We found a peak equality between the age group of 1 to 17 years old and 17 to 27 years old. Catherine SU et al. [10] in 2018 on early relaparotomies at the University Hospitals of Lubumbashi reported an average age of 34.6 ± 19 years.

A predominance of women was found in the study. This result corroborates that of Negura A [11] In 2016, in its study on the treatment of postoperative peritonitis, it reported a female predominance of 65%.

The most affected socio-professional stratum was housewives. It reflects the high rate of women providing OPPs from maternity wards. On the other hand, a previous Guinean study carried out by Kanté DB et al. [3] in 2021 at the Ignace Deen University Hospital reported a predominance of workers (28.12%).

The study showed that almost all of the respondents resided in rural areas and came from private clinics. This result can be explained by the fact that these rural areas and private clinics do not have a specialized structure and competent staff for the care of PPOs.

Just over half of the patients we operated on for postoperative peritonitis were initially diagnosed with acute appendicitis (56%).

The majority of patients were operated on by general practitioners and nursing staff. This is justified by the lack of specialists in the region's health facilities.

Abdominal ultrasound showed diffuse intraperitoneal effusion in all patients who performed this examination. In Morocco in 2019, Tirizite N [12] In his study on the prognostic criteria for postoperative peritonitis also reported that ultrasound showed that 77% of these patients had intraperitoneal effusion.

In the operating room, the wide median approach above and below the umbilical was chosen. It made it possible to explore the entire cavity and treat as many lesions as possible. Kanté DB et al [3] in 2021 at the Ignace Deen University Hospital reported that all these operated patients had benefited from an incision above and below the umbilical in 93,75.

At the opening of the abdominal cavity, the coarse leakage of intestinal contents responsible for Postoperative peritonitis was due in part to release of appendicular stump sutures from the first operation. The non-compliance with asepsis, antisepsis and the surgeons' defects would explain this de facto result. In Greek literature, Mykola D [13] in 2020 observed that the cause was loose sutures in 53% of cases.

The mean duration of patient reinterventions was 95.74 ± 24.64 minutes with extremes of 60 and 180 minutes. The majority of patients were operated on between 61 and 120 minutes. In Morocco, Ross [14] in 2018 mentioned that most of these patients were operated on between 50 and 100 minutes which represented a frequency of 72.87%.

The postoperative follow-up was simple and favorable in the majority of cases with a case fatality rate of 16%.

The precocity of specialized care associated with a more appropriate postoperative follow-up would justify this cure rate.

The average length of stay of our patients was 16.4 ± 9.1071 days with extremes of 4 to 40 days. This could be explained by the fact that some of our patients who were received late in the septic shock phase and benefited from resuscitation sessions before their operation. In Ukraine in 2019, Mykola D [13] mentioned that most of these patients (60.2%) did more than 14 days after surgery.

Prognostic factors were investigated according to the postoperative follow-up on the basis of a statistical test. Our variables were: History, time to treatment and procedures performed in the operating room. After the analysis, we obtained only the P-value values of the patient's gastrointestinal history and the prolonged delay in the management of postoperative peritonitis are significant.

Conclusion

This study showed a high frequency of postoperative peritonitis in the department, the majority of which were young women from clinics in the periphery. Most postoperative peritonitis was due to loosening of appendicular stump sutures. For a good understanding of the etiology factors, a multicenter study would be necessary to collect data on the etiological aspects and management of postoperative peritonitis.

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Volume 7 Issue 3 September 2024

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