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Therapeutic and Prognostic Aspects of Acute Generalized Peritonitis at the Referral Health Center (CSRéf) of Ouélessébougou

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Abstract **Original Research Article**

Our objectives were to determine the hospital frequency, describe the clinical, diagnostic, and therapeutic aspects, and assess the postoperative outcomes. ***Methods:*** The study took place in the surgery department of the CSRéf of Ouélessébougou. It was a descriptive, analytical, and retrospective study over a 26-month period, from June 2021 to October 2023, including all patients operated on for acute peritonitis with an exploitable medical record. ***Results:*** During the study period, 182 patients underwent emergency surgery, of which 43 cases were for acute peritonitis, a frequency of 0.44%. The average age was 28.58±16.53 years, ranging from 7 to 70 years. The age group of 01 to 30 years was the most represented, accounting for 60.5%. The majority of patients were male (65%). All patients presented with abdominal pain, associated with vomiting as a functional symptom. The initial site of pain was in the right iliac fossa in 48.8% of patients. ASP (Abdomen without Preparation) was performed on 33 patients, revealing diffuse greyness in all these patients and an interhepatic-diaphragmatic gas crescent in 11 patients. Ultrasound was performed in 21 patients (49%), especially when the clinical diagnosis was unclear. General anesthesia was administered to all patients. Appendicular etiology was identified in 46.5% of cases. The majority of patients had a good prognosis according to the Mannheim Peritonitis Index (MPI) in 97.7% of cases. Postoperative outcomes were uncomplicated in 72.1% of patients, but 23.3% experienced parietal suppuration.

Keywords : Surgery, Generalized Acute Peritonitis, Prognosis.

INTRODUCTION

Peritonitis is an acute inflammation of the peritoneum, most often secondary to the perforation of a digestive organ or the spread of an intra-abdominal septic focus [1]. It is considered generalized when it extends to the entire peritoneal cavity. This is a life-threatening emergency requiring rapid hospitalization and therapeutic intervention [2]. It ranks third among acute surgical abdomens after appendicitis and intestinal obstruction [3]. In France, its frequency is estimated at 3% [4] of all acute surgical emergencies. In Africa, peritonitis frequency in Niger is reported at 28.8% [6], and a 2022 study in Mali at CSRéf Bougouni showed a frequency of 39.8% [7]. In Sikasso, peritonitis frequency was estimated at 54.7% [8]. The treatment of this infectious acute pathology involves resuscitation measures, surgical eradication of intra-peritoneal infectious foci, and prolonged, adapted antibiotic therapy [10]. The prognosis of secondary generalized peritonitis depends as much on the cause and patient condition as on the timeliness of treatment [2].

OBJECTIVES

Our objectives were to determine the hospital frequency, describe the clinical and therapeutic aspects, and evaluate the cost of treatment.

PATIENTS AND METHODS

This was a descriptive, analytical, and retrospective study over 26 months (June 2021 to October 2023), including all patients operated on for acute peritonitis with an exploitable medical record at CSRéf of Ouélessébougou. Patients operated on for other

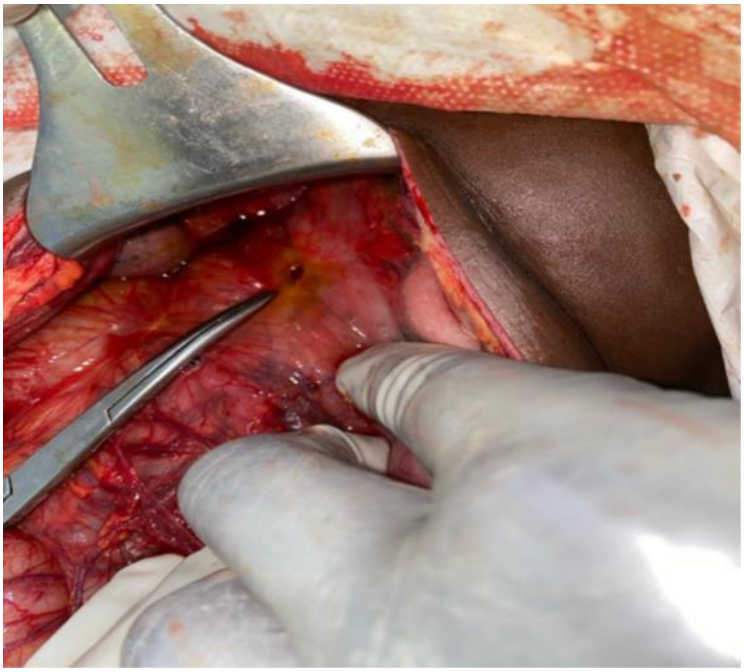
emergencies were excluded. The diagnosis of peritonitis was clinical, and all patients were thoroughly examined. Paraclinical exams, such as abdominal X-rays and ultrasounds, were performed for certain patients. All patients underwent pre-, intra-, and postoperative resuscitation and general anesthesia. Appendicular etiology was present in 46.5% of patients. The surgical procedures performed were mainly appendectomy, lavage, and drainage. The Mannheim score was less than 26 in 97.7% of patients. Data was collected from operating room records, consultations, and hospitalization records, entered in Word 2016, and analyzed using SPSS 21 (French version). Significant differences were set at $p \leq 0.05$.

RESULTS

During the study period, 182 patients underwent emergency surgery, of which 43 cases were acute peritonitis (0.44%). The average age was 28.58±16.53 years (ranging from 7 to 70 years). The most represented age group was 01 to 30 years (60.5%). The majority of patients were male (65%). All patients presented with abdominal pain, with 48.8% initially reporting pain in the right iliac fossa. Patients consulted on average 4.41 days after symptom onset. ASP was performed in 33 patients, showing diffuse greyness in all cases and an interhepatic-diaphragmatic gas crescent in 11 patients. Ultrasound was performed in 21 patients (49%). The diagnosis of generalized acute peritonitis was mainly clinical and confirmed during surgery. General anesthesia was administered to all patients. The most common etiology was appendicitis (46.5%), followed by duodenal perforation (14%). Most patients had a good prognosis according to the Mannheim score (97.7%), with an average hospital stay of 5.36 days. Postoperative outcomes were uncomplicated in 72.1% of cases, while 23.3% had parietal suppuration. One patient died (2.3%), and two patients developed hernias (2.3%).

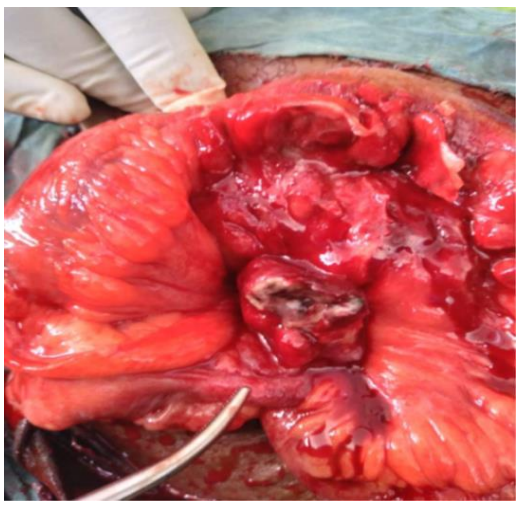
Table: Distribution of patients according to the Hamburg classification

Hamburg Classification		**Number of cases**	**Percentage**
Primary peritonitis		-	-
Secondary peritonitis	Appendicular	20	46,5
	Duodenal perforation	6	14,0
	Ileal perforation	4	9,3
	Gynécological	3	7,0
	Liver abcess	3	7,0
	Gastric perforation	2	4,6
	Colonic perforation	1	2,3
	Jejunal perforation	1	2,3
Tertiary peritonitis	Post cesarean	3	7,0
Total		**43**	**100**



– Peritonitis due to gastric perforation in a 36-year-old patient.

- Peritonitis due to uterine necrosis following a cesarean section in a 27-year-old patient.
- Appendectomy specimen



- Peritonitis due to appendicular perforation in a 34-year-old patient.

DISCUSSION

During the study period, we observed an incidence of 6.70% of acute peritonitis among all surgical interventions. This frequency does not statistically differ from that reported by Lorand I *et al.*, [24], with $p > 0.05$. However, it shows a significant difference compared to the studies by Cissé *et al.*, [23] and Sidibé *et al.*, [7] in Mali, with $p < 0.05$. This discrepancy could be attributed to differences in sample sizes. The mean age of patients in our study was 28.58 years, consistent with most African series [7, 25, 38]. In contrast, developed countries report older patients, as seen in Gougard's study [38]. This difference might be due to the younger demographic profile in Africa. Age does not appear to be a factor in the incidence of peritonitis. We observed a male predominance (65%) with a sex ratio of 1.85 (2 men for every 1 woman), which is not statistically different from the series by Doumbia *et al.*, [26] and Berthé A *et al.*, [27], with $p > 0.05$. Patients consulted after an average delay of 4.41 days, which does not differ significantly from the findings of Mariage M *et al.*, [29], Bakhou A *et al.*, [30], and Camara B *et al.*, [31] with $p > 0.05$. Intense, continuous abdominal pain with a sudden onset was the most consistent symptom. Pain characteristics such as location, radiation, and type are crucial for diagnosis [38]. Abdominal pain was present in all patients, as reported by Sidibé *et al.*, [7], L. Traoré *et al.*, [32], and Maiga B *et al.*, [34]. Vomiting, whether alimentary, bilious, or fecaloid, was observed in 34.9% of patients, in line with L. Traoré *et al.*, [34]. The incidence of stool and gas cessation in 9.3% of patients did not significantly differ from L. Traoré *et al.*, (11.9%) [34] and Kunin (14.3%) [37] in France. Several factors contribute to delayed consultation in our context, including socioeconomic challenges and reliance on traditional treatments. The average progression time was 2.5 days, consistent with other African studies [10, 16], but differing from the literature [22, 23]. Pain was primarily localized in the right iliac fossa (84.4%), aligning with reports in the literature [13, 17]. Appendiceal causes were identified in 20 of our patients, with an internal latero-caecal position in 98.2% during surgery, reflecting findings from French and Nigerien series [17, 18] without significant differences. The average length of hospital stay was 5.36 days, slightly longer than in Asian, American, and Israeli studies [21, 22, 23]. This difference can be attributed to delays in management and the fact that most patients reside in rural areas with limited access to quality care, unlike Europe, where care is typically covered by social security.

CONCLUSION

Acute generalized peritonitis is a common surgical emergency with severe morbidity and mortality. The appendicular origin remains the most common etiology. Postoperative mortality is associated with the degree of peritoneal contamination, consultation delay, and therapeutic management. The improvement of surgical outcomes is related to early diagnosis and the speed of management.

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