

Postoperative Peritonitis: Frequency, Clinical and Therapeutic Aspect in the General Surgery Department of the Ignace Deen National Hospital of Conakry, Guinea

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Abstract: *Purpose:* Postoperative peritonitis is a peritoneal infection that complicates an intraperitoneal surgical procedure within one month. The purpose of this study was to determine the frequency, describe the clinical and therapeutic aspects of postoperative peritonitis. *Patients and methods:* This was a prospective study of descriptive type, lasting two years (January 1, 2020 to December 31, 2021) carried out in the general surgery department of the Ignace Deen National Hospital of Conakry. It included all patients received and operated on in the department for postoperative peritonitis, regardless of the origin of the initial operation. *Results:* We collected 32 cases of postoperative peritonitis with an average age of our patients of 33.75 years. Fifty-seven point fourteen percent of our patients were diabetic. Appendectomy was the most performed initial procedure with a rate of 40.62% followed by acute intestinal obstruction (18.75%). Clinical signs were dominated by abdominal pain (100%), abdominal contracture (100%), fever (100%) and painful douglas (84.38%). The average time to management of our patients was 12.53 days. The management was medico-surgical and we performed median laparotomy above and below the umbilical in all our patients. The etiologies were dominated by anastomotic leakage (56.25%), subphrenic abscess (25%), digestive fistulas (18.75%). The surgical gesture consist temporary stoma (n=11) followed by a refection of anastomosis (n=7) and intestinal resection/anastomosis (n=4). Peritoneal washing and drainage were performed in all cases. The average duration of hospitalization was 18 days. We recorded 9 cases of death (28.13%). *Conclusion:* Post-operative peritonitis is a condition with a high mortality rate. Management must be multidisciplinary to improve the prognosis.

Keywords: Peritonitis, Postoperative, Digestive Fistula, Anastomoses

1. Introduction

Postoperative peritonitis is a peritoneal infection that complicates an intraperitoneal surgical procedure within one month. The frequency reported in the literature varies between 1.5% and 5% [1, 2]. The favourable factors are technical imperfections, the duration of the operation, local infection and obesity. The etiology remains dominated by the loosening of an anastomosis or a digestive suture in 50 to 70% of cases [3]. Postoperative peritonitis presents a diagnostic problem and a management challenge for

practitioners; they are formidable complications with a high mortality rate related to multivisceral failure and septic shock [4]. The aim of this study was to determine the frequency, describe the clinical and therapeutic aspects of postoperative peritonitis in the general surgery department of the Ignace Deen national hospital.

2. Material and Methods

This was a prospective descriptive study conducted in the general surgery department of the Ignace Deen National

Hospital of Conakry, from January 1, 2020 to December 31, 2021. It focused on all patients received and operated on in the department for postoperative peritonitis regardless of the indication and place of the initial surgery. In this study, cases of peritonitis occurring within 30 days of the initial surgery were included. The clinical data and the macroscopic lesions described at the time of the re-intervention were the only criteria for selection of the files.

The parameters studied were epidemiological, clinical and therapeutic. Our data were analyzed by the Epi-info software in its version 7.0. Qualitative data were presented in terms of frequency or percentage and quantitative data were evaluated as an average.

3. Results

During our study period, we collected 32 cases of postoperative peritonitis, representing 2.81% of all the activities of the department (n=1138). The mean age of patients was 33.75 years-old, with extremes of 12 and 79 years-old, and the most represented age group was 21-30 years. We noted the predominance of the male sex with a sex ratio of 1.28. Fifty-seven point fourteen percent of patients had diabetes. Appendectomy was the most performed initial procedure with a rate of 40.62% followed by acute intestinal obstruction (18.75%). The average time of onset was 12.53 days with extremes of 4 and 26 days. The clinical signs are shown in Table 1. Abdominal ultrasound was contributive to the diagnosis in 59.38% of cases. The treatment was medico-surgical and we performed median laparotomy above and below the umbilical in all cases. The etiologies of postoperative peritonitis are shown in Table 2; Table 3 illustrates the frequency of the procedures performed. The average length of hospitalization in our series was 18 days with extremes of 8 and 30 days. The postoperative course was simple in 65.63% of cases; we recorded 9 cases of death (28.13%).

Table 1. Frequency of clinical signs.

Clinical signs	Number	Percentage
Abdominal pain	32	100.00
Vomiting	16	50.00
Fever	32	100.00
Diarrhea	10	31.25
Hiccups	6	18.75
Tachycardia	21	65.62
Conjunctival pallor	6	18.75
Oliguria	4	12.50
Hypotension	14	43.75
Abdominal distension	22	68.75
Abdominal tenderness	32	100.00
Painful Douglas	27	84.38

Table 2. Etiologies of postoperative peritonitis.

Etiologies	Number	Percentage
Anastomotic leakage	18	56.25
Subphrenic abscess	8	25.00
Digestive fistulas	6	18.75
Total	32	100.00

Table 3. Frequency of surgical gesture.

Gesture	Number	Percentage
Peritoneal washing and drainage	32	100.00
Sutures of the perforation	21	65.63
Refection of the anastomosis	8	25.00

4. Discussion

Postoperative peritonitis is a frequent and serious condition that occurs after abdominal surgery and varies from one country to another depending on the studies. During our study period, we found a frequency of 2.81% of postoperative peritonitis. This rate is higher than the rates reported by Coulibaly B et al [5] and Traoré A et al [4] who found respectively 0.15% and 0.62%; however, it is superposable to the 2% reported by Mariette C et al [6].

The mean age of our patients is lower than that reported by Mulari K et al [7] and Nabil T [8]: 67 and 43.50 years respectively. Indeed the African population is younger than the European one [7, 9]. The predominance of the male sex has been reported by some authors [7, 10, 11].

Clinically, the diagnosis of postoperative peritonitis is not easy because the physical signs are not as obvious as in the so-called community peritonitis [5]. The average time to onset in our series was 12.53 days.

The diagnosis of fistula is essentially clinical and easy by the observation in the postoperative period. The onset of abdominal pain and postoperative fever were the main symptoms found in all our series, this rate is comparable to that reported by Coulibaly B et al [5] who noted 92% of abdominal pain and 84% of fever. Traoré A et al [4] reported that fever occurrence after digestive surgery should lead to a search for an intra-abdominal infectious. However, its absence should not exclude the diagnosis of intraperitoneal infection. Actually, clinical signs of postoperative complications are not specific and hard to find. [4, 5].

The physical signs are generally less frank during intra-abdominal infections, we noted the predominance of abdominal tenderness followed by painful and bulging douglas. Our results are comparable to those of Traoré A et al [4].

Acute appendicitis was the most common indication for initial surgery as reported by authors in the literature [12]. It may be an inadvertent opening of the coecum or ileum, a slipped stump ligature and a too low appendix stump amputation. The increasing number of non-employed medical graduates in our country in the last ten years has contributed largely to the setting of clandestine medical clinics and the illegal practice of surgery by nonspecialized agents. This reality explains the high number of patients initially operated in private health structures and peritonitis related to appendectomies (40.62%) noted in this study. In general, these peritonitis appear as early as the end of the first week after the initial surgery.

The therapeutic management of postoperative peritonitis is quite complex and still very difficult in a disadvantaged surgical environment like ours. Initial treatment should focus on correction of fluid and electrolyte imbalance, treatment of

sepsis and anemia. This non-operative approach has the advantage to prepare the patient for an early re-laparotomy and prevent occurrence of multivisceral failure and septic shock. The treatment of the causes depends on the ability of the surgeons. It's clear that drainage of peritoneal collection and washing are essential; also, in case of fistulas or anastomosis leakage, temporary stoma leads to better result than any intestinal resection or anastomosis.

Overall, the management of postoperative peritonitis is associated with considerable mortality, particularly in resource-limited settings. The mortality rate of 6.25% found in our series was higher than the rates reported by Coulibaly B [5] and Drachili L [12] who reported mortality rates of 4% and 4.4% respectively. This rate is lower than the rates reported by Traoré A [4], and Chichom A [13] respectively 53.4% and 29.8%. Mortality varies according to the site of the infection and the time taken to manage the patients [5, 14]. The causes of death are usually multi-visceral failure and septic shock [4].

Continuous training of surgical staff, especially in tertiary hospitals, strict compliance with the rules of asepsis and antisepsis, careful hemostasis as well as rigor in the realization of sutures and digestive anastomoses are among the recommendations to be implemented for the reduction of the frequency of postoperative peritonitis in our hospitals.

5. Conclusion

Postoperative peritonitis is a serious abdominal surgical condition in our environment and appendectomy remains the common initial surgery. Its diagnosis is often difficult because of the non-specificity of clinical signs. In a context of limited resource setting the occurrence of postoperative peritonitis is associated with a high mortality rate. To improve patient's outcome, it is important to have an early and good resuscitation before re-laparotomy.

Conflict of Interest

The authors declare that they have no competing interests.

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