

Research Article

Precose Post-Operative Complications of Abdominal Surgery at the Communal Medical Center of Ratoma (CMC Ratoma)

Diawara Mohamed Albert^{1,*}, Keita Doubany Mariame², Guirassy Mariama II², Fofana Naby², Camara Soriba Naby³, Fofana Houssein², Toure Aboubacar²

¹Surgery Department of the Ratoma Communal Medical Center, Faculty of Health Sciences and Techniques, Gamal Abdel Nasser University of Conakry, Conakry, Guinea

²General Surgery Department Ignace Deen, National Hospital, Faculty of Health Sciences and Health Technic, Gamal Abdel Nasser University of Conakry, Conakry, Guinea

³Department of Visceral Surgery, Friendship Hospital Sino Guinean, Faculty of Sciences and Health Technic, Gamal Abdel Nasser University of Conakry, Conakry, Guinea

Abstract

Introduction: Postoperative complications are incidents or accidents that may occur after any surgical intervention. They lead to the aggravation of the previous situation by their morbidity and even their mortality. The objective of this work was to study the early postoperative evolution in the digestive surgery and Maternity departments at the CMC of Ratoma. **Methodology:** This was a descriptive prospective study over a period of (6) months from July 01, 2021 to December 31, 2021 carried out in the surgery and maternity departments of the Ratoma municipal center. **Results:** we operated on 403 patients in the surgery and maternity departments of the CMC in Ratoma, of which 50 cases, or 12%, developed early postoperative complications. The age group of 20-30 years was the most affected 22 cases or 44% with an average age of 29.5 years, extremes of 3 years and 85. The female sex was dominant 36 cases or 78% of cases with a sex ratio of 3.5. The majority of patients 26 or 56% were operated on in the maternity ward, where caesarean section was the most performed surgical procedure. Emergencies were represented in 26 cases or 56% of surgical interventions, infection of the surgical site was the most common postoperative complication in 40 cases or 80%. All our suppurred patients benefited from a pus sample for cytobacteriological examination and were treated according to the result of the antibiogram plus local care. 72% of our patients were followed on an outpatient basis. The evolution was favorable in 44 of our patients, i.e. 88%, and unfavorable in 6 of our patients, i.e. 12%, including ISO, evisceration and death each in 2 cases, i.e. a common rate of 4%. **Conclusion:** Early postoperative complications were frequent at CMC Ratoma. Surgical site infections were the main early OCC presented by the patients. The management was medical and surgical. The evolution was favorable in most cases, however we recorded a few cases of death.

Keywords

Ratoma, CMC, Surgery, Early Postoperative Complications

*Corresponding author: mohamedalbertdiawara@gmail.com (Diawara Mohamed Albert)

Received: 23 June 2023; **Accepted:** 8 August 2023; **Published:** 20 September 2024



Copyright: © The Author(s), 2024. Published by Science Publishing Group. This is an **Open Access** article, distributed under the terms of the Creative Commons Attribution 4.0 License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution and reproduction in any medium, provided the original work is properly cited.

1. Introduction

Post-operative complications (POC) refer to all incidents or accidents that may occur during or after any surgical intervention [1]. After surgery postoperative complications (POC) are not uncommon; some are transient, others can be severe, but all are important to patients. The probability of postoperative complications is influenced by the type of surgery, the preexisting state of comorbidity and by the perioperative management of patients [5]. Postoperative complications in abdominal surgery have a high incidence in hospitals in developing countries, thus increasing their morbidity and mortality rate. In developing countries, the under-equipment of health structures and the glaring lack of qualified personnel constitute a real handicap in the approach to surgery, particularly digestive surgery [7]. They are said to be early when they occur within thirty (30) days of the intervention. Despite the use of less and less invasive and increasingly efficient techniques to reduce postoperative morbidity, POCs remain a major problem in surgery [1].

The aim of this study was to evaluate the early postoperative evolution of patients in the surgical departments (digestive and maternity surgery) at the Ratoma Medical Center.

2. Material and Methods

This was a prospective observational study lasting (6) months from July 01, 2021 to December 31, 2021 concerning all patients operated on during the study period and having presented a postoperative complication occurring in the 30 days after the initial operation, all patients presenting with another early non-abdominal POC and complications occurring after 30 days were excluded. Our variables were epidemiological, clinical, therapeutic and prognostic. Our data was entered using Kobocollect software in version 1.30.1 Word and Excel of the 2016 office pack analyzed using SPSS software in version 21.0.

3. Results

During our study, 403 patients were operated on in the digestive surgery and maternity departments at the Ratoma CMC, of whom 50 developed early postoperative complications, i.e. 12%. The age group of 20-30 years was the most represented 22 cases or 44% with an average age of 29.5 years, extremes of 3 years and 85 years, illustrated in table 1. The female sex was dominant 36 cases or 78% with a sex ratio of 3.5. Ten of our patients had comorbidities, of which diabetes and hypertension were the most frequent. These comorbidities are shown in Table 2.

Table 1. Breakdown of patients by age group.

Ages (years)	Workforce	Percentage (%)
<10	2	4
10 to 20	6	12
20 to 30	22	44
30 to 40	11	22
40 to 50	5	10
>50	4	8
TOTAL	50	100

Table 2. Distribution According to Comorbidities.

Co-morbidities	Number	Percentage (%)
Diabetes	4	40
hypertension	3	30
Epilepsy	2	20
HIV	1	10
Total	10	100

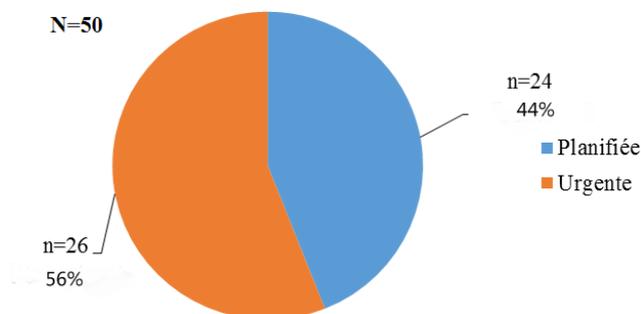


Figure 1. The majority of patients were operated on in the maternity ward, 56% or 26 cases.

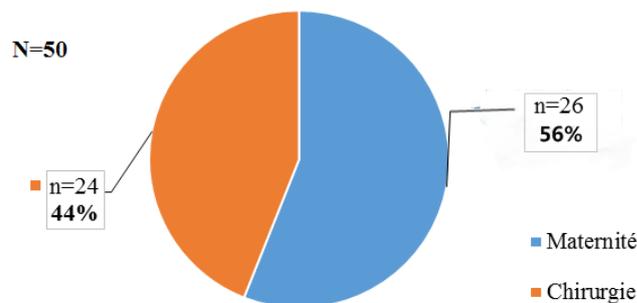


Figure 2. Distribution of patients according to the department to which they belong.

Emergencies were the most represented 56% or 26 cases. They are depicted in [Figure 1](#).

The clinical signs depended on the type of complication: For surgical site infections (SSI), they were manifested by oozing or a flow of purulent liquid at the level of the surgical site with sometimes a purulent flow through the wall or through the drain, they can be superficial or deep. In front of a digestive fistula, they are made of a small or a large fistulous orifice through which gas and stool escape intermittently. In the event of evisceration, it is the abdominal viscera that are observed through the disunited skin sutures.



Figure 3. Stercoral fistula.



Figure 4. Postoperative evisceration.



Figure 5. Parietal suppuration.

Of all postoperative complications noted in this study, infections of the surgical site were the most frequent (40 cases, i.e. 80%), followed by evisceration, postpartum hemorrhage and sepsis, each presenting 2 cases, i.e. 4%. Description given in [Table 3](#) below.

Table 3. Distribution of patients according to type of complication.

Postoperative complications	Number	Percentage (%)
ISO	40	80
Gutting	2	4
Digestive fistula	1	2
Scrotal hematoma	1	2
Parietal hemorrhage	1	2
Postpartum hemorrhage	2	4
Postoperative occlusion	1	2
Sepsis	2	4
Total	50	100

In our series, postoperative complications occurred between the 7th and 14th day with an average time to onset of 12.65 days with extremes of 4 and 16 days. A sample of pus for the cyto-bacteriological study + antibiogram was performed in all our patients who developed the infection of the surgical site. *Staphylococcus aureus* was the most highlighted germ in 38.5% of cases, followed by *Escherichia coli* 26% of cases, *Streptococcus* 19% and *Staphylococcus epidermidis* 16.5% of cases.

The management of postoperative complications in our patients was dominated by local care + antibiotic therapy according to the result of the antibiogram in 80%, resection – anastomosis + section of the flanges in 4% of cases, resection anastomosis 4%.

The average length of hospitalization was 7.49 days with extremes of 1 day and 13 days.

The evolution was favorable in 44 cases or 88% and unfavorable in 06 cases or 12% including ISO, Evisceration and death each 2 cases or a common rate of 4%.

4. Discussion

During our period, the hospital frequency of early postoperative complications was 12%. This hospital prevalence was comparable to that reported by Traoré A et al. [13] who noted a frequency of 15.4%. On the other hand, lower than that of JK Kambiré et al. [11, 14] and Serge N and cool. [7] who noted 16.4% and 32.2%.

The age group of 20 to 30 years was the most represented

with an average age of 29.5 years including the extremes of 3 and 85 years. This result is similar to those found by TONYE et al. [1] as well as ASSOUTO et al. [2] in their studies where they found 31.5 years and 30 years respectively as the mean age.

In our series, emergencies accounted for 26 cases, or 56%, this result was higher than that of Traoré A et al. [12, 13] in Mali, Ahmedou M et al. [5], Assouto et al. [2] who noted 45.2% respectively; 51.2%; 27.6%. In view of these results, we can say that emergency surgery is a risk factor for postoperative complications, because all the conditions of good preparation are not met for the care of these patients.

During our series, the maternity ward had recorded the high number of early postoperative complications, i.e. 56% of cases, caesarean sections for acute fetal distress are the type of initial surgery having caused the maximum number of complications, i.e. 20%. These would be explained by the fact that caesarean sections are usually operations performed in an unscheduled mode and therefore do not benefit from less preparation than other operations in general surgery.

During our study, infection of the surgical site was the most common postoperative complication encountered in 80%. This result was superior to that of JK Kambiré et al. [14] as well as Ouangréné E et al. [4] who respectively found 50.7%; 62.8% surgical site infection. The predominance of surgical site infections in the African series can be explained by the difference in the levels of asepsis practiced.

The onset of complications was between 7 and 14 days in our patients, differing from that reported by Traoré A et al. [6, 13] and TONYE et al. [1] where complications had occurred in the first 3 days and 7 days after surgery. This could be explained by the frequency of infectious complications on the one hand and on the other hand by the non-respect of the rules of asepsis during dressings. Our results confirm the data of the African literature which places postoperative infectious complications with surgical site infection in the foreground.

Staphylococcus aureus was the most highlighted germ followed by *Escherichia coli*.

Our result is identical to those of Sawadogo Y and cool. [8] and Traoré O et al. [9].

Antibiotics were used in 80% of our patients according to the results of the antibiogram associated with local care, 12% of them received rehydration solutions.

In our study, 8% of our patients underwent revision surgery, as did the following: [4, 13, 8].

The evolution was favorable in our study with 88% of patients cured without sequelae with 4% death. These results are lower than those found by ASSOUTO et al. [2]; JK Kambiré et al. [14]; who found respectively 13.3% and 47.4% of deaths, but higher than that of COULIBALY [3] who noted 1.9%.

In our study, the average hospital stay was 7.49 days. This duration is lower than that found by JK Kambiré et al. [14]; Serge N [7] and Berthé B [10] who respectively found an average duration of 12.3; 27.4 and 17.5 days. The occurrence of POC would increase the duration of hospitalization of patients.

5. Conclusion

Early postoperative complications were frequent at CMC Ratoma. Surgical site infections were the main early OCC presented by the patients. The predominance of surgical site infections in the African series can be explained by the difference in the levels of asepsis practiced. Management was generally medical and surgical. The evolution was favorable in most cases, however we recorded a few cases of death.

Conflicts of Interest

The authors declare no conflicts of interest.

References

- [1] Tonye TA, Essi MJ, Handy E D, Ankouane A, Minka Ngom E, Ngo Nonga B, et al. Early Postoperative Complications in District Hospitals of the City of Yaoundé Epidemiology and Clinic. *Health Sci Dis*. 2015; 16(1): 5-6.
- [2] Assouto P, Tchaou B, Kangni N, Padonou JL, Lokossou J, Djiconkpodé I, et al. Early post-operative evolution in digestive surgery in a tropical environment. *Med Too*. 2009; 69(1): 477-9.
- [3] COULIBALY Y, KEITA S, DIAKITE I, KANTE L, OUARTARA Y, DIALLO G. EARLY POSTOPERATIVE COMPLICATIONS IN PEDIATRIC SURGERY AT GABRIEL TOURE CHU. 2008, MALI MEDICAL vol. 23. No. 4, 57-59.
- [4] Ouangréné E, Zida M, Sawadogo YE, Zaré C, Bazongo M, Sam A, et al. Early postoperative complications of acute surgical abdomens in the general and digestive surgery department of Yalgado Ouédraogo University Hospital in Burkina Faso: about 98 cases. *Rev Afr Chir Spec* 2017; 11: 19-24.
- [5] Ahmedou Moulaye Idriss, Yahya Tfeil, Jiddou Sidi Baba, Sid'Ahmed Md Boukhary, Mohamed Abdallahi Deddah. Applicability of the Clavien-Dindo classification in the evaluation of postoperative complications in the surgical clinic of the National Hospital Center of Nouakchott: observational analysis of 834 cases. *Pan African Medical Journal*. 2019; 33: 254. <https://doi.org/10.11604/pamj.2019.33.254.18024>
- [6] Jean Dupont Kemfang Ngowa, Anny Ngassam, Jovanny Tsuala Fouogue, Junie Metogo, Alexis Medou, Jean Marie Kasia. Early maternal complications of caesarean section: about 460 cases in two university hospitals in Yaoundé Cameroon. *Pan African Medical Journal*. 2015; 21: 265 <https://doi.org/10.11604/pamj.2015.21.265.6967>
- [7] Serge Ngoie Yumba, Trésor Kibangula Kasanga, Stéphane Ilunga Arung Kalau Augustin Kibonge Mukakala, David Mutombo Mwembo, Iteke Fédé Rivain, Mukakangala et al. Early postoperative complications in abdominal surgery at the university clinics of Lubumbashi: Frequency, diagnosis and prognosis. *International Journal of Surgical Sciences* 2021; 5(1): 136-142. <https://doi.org/10.33545/surgery.2021.v5.i1c.601>

- [8] Yobi Alexis Sawadogo, Evelyne Komboigo, Sibraogo Kientore, Hyacinthe Zamane, Issa Ouedraogo, Dantola Paul Kain et al. Post-cesarean parietal suppuration at the Yalgado Ouedraogo University Hospital Center, Burkina-Faso: epidemiological, clinical, therapeutic and prognostic aspects. *Pan African Medical Journal*. 2019; 32: 35. <https://doi.org/10.11604/pamj.2019.32.35.17167>
- [9] Traore O et al., Infections of the Operating Site at the Reference Health Center of Commune V of the District of Bamako.: Comparison between Systematic and Iterative Cesareans. *Health Sci. Dis: Vol 23 (2)*. February 2022. pp. 138-142.
- [10] Berthé B, Traoré SO, Konaté I, Sogoba D, Tall S, Samake A. Comparative study of infections of the operating site: systematic cesarean versus iterative cesarean at the reference health center of commune V in the district of Bamako/Mali. *Rev Mali Infect Microbiol* 2019, vol 14. 27-31.
- [11] Ngaroua, Joseph Eloundou Ngah, Thomas Bénet, Yaouba Djibrilla. Incidence of surgical site infections in sub-Saharan Africa: systematic review and meta-analysis. *Pan African Medical Journal*. 2016; 24: 171 <https://doi.org/10.11604/pamj.2016.24.171.9754>
- [12] L. Mer zougui, N. Marwen, H. Hannachi, et al. Incidence and risk factors of surgical site infection after caesarean section in a maternity hospital in Tunisia. *Public Health* 2018/3 (Vol. 30), pages 339 to 347.
- [13] Traore A et al. Postoperative complications in abdominal surgery at the CHU Gabriel Touré Medicine from Black Africa. 5801. 2011. 31-35.
- [14] JL Kambiré Souleymane Ouédraogo, Salam Ouédraogo, B Béré M Zida. Epidemiological and clinical profile of early postoperative complications in abdominal surgery. *Jaccr Africa* 2021; 5(3): 21-26.