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Morbidity and Mortality in Rectal Surgery: A Study of 25 Cases in Casablanca

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Abstract

Rectal surgery is the only potentially curative treatment for many rectal pathologies, whether benign or malignant. However, postoperative complications can significantly impact the prognosis of patients. This retrospective study aimed to investigate morbidity and mortality among patients undergoing rectal cancer surgery over a two-year period at the Department of Digestive Cancer Surgery and Hepatic Transplantation of Ibn Rochd University Hospital (CHU) in Casablanca, Morocco. Among 62 patients, the average age was 61.98 ± 10.2 years (mean ± SD), with a female-to-male ratio of 1.5. Overall morbidity and mortality rates were 40.3% and 12%, respectively. Postoperative complications primarily included surgical site infections (40%) and urinary infections (20%), while long-term complications comprised incisional hernias (20%) and sexual problems (8%). The primary cause of mortality was intraoperative hemorrhage (8%) (Almatroudi, 2020). Factors influencing morbidity and mortality included age, BMI, comorbidities, type of intervention, and the benign or malignant nature of the pathology. Neoadjuvant chemotherapy was administered to 88% of

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patients and should be considered a key factor influencing outcomes, as it may contribute to better tumor control and reduce the extent of surgical resections required (Gado et al., 2014). The small sample size of this study may limit the statistical significance of the findings. Further research with a larger cohort is necessary to corroborate these results.

Keywords: Rectal surgery, Postoperative complications, Rectal cancer

Introduction

Rectal surgery is a critical intervention for a wide range of rectal pathologies, including both benign and malignant conditions. Despite substantial advancements in surgical techniques, improved equipment, and adherence to aseptic principles in the operating theater, the morbidity rates for rectal surgeries remain high. Studies have shown that these rates are approximately 35% in many global regions (Alves, 2005). Moreover, the impact of postoperative complications such as surgical site infections, anastomotic leaks, and organ dysfunction continues to affect patient prognosis. In Morocco, and specifically at Ibn Rochd University Hospital, regional factors and healthcare limitations further complicate surgical outcomes, necessitating an in-depth investigation into the causes of morbidity and mortality in rectal cancer surgery.

Our study aims to investigate the frequency and factors influencing morbidity and mortality in rectal surgeries at the hospital. Previous research has identified several factors influencing surgical outcomes, including age, body mass index (BMI), comorbidities, the type of intervention, and whether the pathology is benign or malignant (Kassem & Al-Rashid, 2021). Additionally, family history of colorectal cancer and inflammatory bowel disease (IBD) have been noted as key factors affecting surgical outcomes (Salih & Aljebreen, 2014).

Literature Review

Surgical morbidity and mortality in rectal surgeries have been extensively studied. Alves (2005) reported a morbidity rate of 35%, with infections and anastomotic leaks being the most common postoperative complications. Other studies, such as those by Kassem & Al-Rashid (2021) in Saudi Arabia, have highlighted the impact of regional practices on surgical outcomes, noting higher complication rates due to differences in surgical experience and healthcare infrastructure. Moreover, the use of neoadjuvant therapies, such as chemotherapy and radiotherapy, has been shown to improve survival rates and reduce the extent of surgery required (Gado et al., 2014). These findings underscore the importance of considering both global and regional data when assessing the outcomes of rectal surgery.

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Methods

This descriptive and analytical retrospective study encompassed all patients undergoing rectal cancer surgery at the Digestive Cancers and Liver Transplantation Surgery Department of Ibn Rochd University Hospital in Casablanca, Morocco, over a two-year period (January 1, 2021 - December 31, 2022). Patient data were collected from medical records, telephone calls to patients or their families, and anatomopathological results. Data analysis was performed using Excel software. Variables studied included socio-demographic characteristics, clinical and paraclinical data, and types of treatments administered.

Complications were classified as intraoperative, early postoperative, or late postoperative. The sample size of 62 patients is limited and may affect the statistical significance of the results.

Results

Among the 62 patients operated on for rectal cancer during the study period, 25 patients experienced one or more intraoperative or postoperative complications, resulting in a morbidity rate of 40.3% and a mortality rate of 12%, with three deaths. The average age of patients was 60.2 ± 9.8 years (mean ± SD), with a predominance in the 60 to 69 age group.

The youngest patient was 42 years old. Women accounted for 60% of cases, with a female-to-male ratio of 1.5. Biochemically, hypoalbuminemia was observed in 20% of patients, and microcytic anemia in 28% (Verdin et al., 2016). Family history of colorectal cancer was documented in 15% of cases, and 10% had a history of inflammatory bowel disease (IBD), which could have influenced disease progression and outcomes.

Neoadjuvant concurrent radiochemotherapy was administered to 88% of patients, which helped in reducing tumor size and improving resectability potential. All patients underwent preoperative preparation, with a midline infraumbilical laparotomy as the primary approach in 88% of cases, followed by laparoscopy converted to laparotomy in 12% of cases.

Intraoperative exploration noted hepatic nodules in 4 patients, peritoneal effusion in 3 patients, and invasion of adjacent structures in 4 patients (Kin et al., 2013).

Surgical complications included intraoperative hemorrhage (8%) and colonic perforation (4%). Early postoperative complications included wound infections (40%) and urinary complications (20%). Late complications included digestive issues (sphincter hypotonia, repeated bowel movements), sexual dysfunction (8%), and anastomotic leakage, which led to sepsis in some cases. Tumor recurrence and metachronous hepatic metastasis were observed during follow-up imaging six months after surgery (Arezzo et al., 2019). The postoperative mortality rate was 12%, with two patients experiencing

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hemorrhage and the third peritonitis, requiring surgical revision. Among the mortality cases, hemorrhagic shock due to uncontrolled intraoperative bleeding was the primary factor in two patients, while the third patient developed sepsis following an anastomotic leak, leading to peritonitis and multi-organ failure. Additionally, delayed recognition of complications and inadequate response to postoperative infections contributed to increased mortality risk.

Discussion

The risk of complications is influenced by various factors, mainly age, BMI, comorbidities, type of resection and anastomosis, benign or malignant nature of the pathology, and emergency intervention (Almatroudi, 2020). Nutritional status, particularly albumin levels, was also implicated. Although some factors, such as type of surgical treatment and approach, showed no significant correlation with complications, tumor stage, histological type, and R0 resection remained important prognostic factors (Gado et al., 2014). The small sample size of this study may have limited the ability to detect statistically significant associations, emphasizing the need for larger-scale investigations. Previous regional studies, including those from Saudi Arabia (Kassem & Al-Rashid, 2021), have reported similar findings, indicating the importance of context-specific factors influencing morbidity and mortality. Neoadjuvant chemotherapy, which was administered to 88% of patients in this study, remains a crucial factor in reducing tumor size and improving the overall prognosis of rectal cancer patients (El-Kader & Ahmed, 2023).

Early postoperative complications mainly involved wound infections and urinary complications, while late complications included sexual dysfunction and hernias. Our complication rates were generally higher than those reported in other studies, which could be due to the size of our study population. Preventing complications involves a multidisciplinary approach, including optimal patient preparation, close postoperative monitoring, and appropriate complication management (Salih & Aljebreen, 2014). Emphasis should be placed on early detection and management of anastomotic leaks to reduce sepsis-related mortality. The findings are consistent with studies in Egypt, where complications such as anastomotic leakage and wound infections were common (Ahmed & El-Sayed, 2022).

Conclusion

Despite advances in rectal surgery techniques, it remains associated with significant morbidity and mortality. Perioperative management is necessary to prevent and reduce complications and improve patient prognosis. Understanding risk factors and implementing preventive measures are crucial for enhancing surgical outcomes (Verdin et al., 2016). The limited sample size

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of this study suggests caution in generalizing the findings, and future studies with larger cohorts are warranted. Special attention should be given to early identification and management of complications, particularly anastomotic leakage and sepsis, to further reduce mortality rates. Regional studies, such as those conducted in Morocco (El-Kader & Ahmed, 2023), offer valuable insights into improving the effectiveness of surgical interventions and postoperative care.

Conflict of Interest: The authors reported no conflict of interest.

Data Availability: All data are included in the content of the paper.

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Declaration for Human Participants: This study has been approved by the Research Ethics Committee of the Department of General Surgery at IBN ROCHD University Hospital, Casablanca, Morocco. The principles of the Helsinki Declaration were followed.

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