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

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Abstract

Rectal surgery is the only potentially curative treatment for many rectal pathologies, whether benign or malignant. However, post-operative 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.". Among 62 patients, the average age was 61.98 years, with a female-to-male ratio of 1.5. Overall morbidity and mortality rates were 40.3% and 12%, respectively. Post-operative 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%). Factors influencing morbidity and mortality included age, BMI, comorbidities, type of intervention, and the benign or malignant nature of the pathology. Therefore, prevention involves

preoperative identification of high-risk patients and enhanced perioperative care through multidisciplinary collaboration.

Keywords: Rectal surgery; Postoperative complications; Rectal cancer; Surgical outcomes

Introduction

Rectal surgery is fundamental in treating numerous benign and malignant pathologies. Despite significant advancements in surgical techniques, sophisticated equipment, and universal aseptic principles in operating theaters, surgical morbidity rates are estimated at around 20 to 35% in the literature (Alves, 2007). Our aim was to study the frequency and factors of morbidity and mortality to prevent or reduce their impact on patients' quality of life.

Materials and 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 over a two-year period from January 1, 2021, to 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 post-operative.

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 years, with a predominance in the 60 to 69 age group. 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%. Neoadjuvant concurrent radiochemotherapy was administered to 88% of patients. 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. Abdominoperineal resection with definitive left iliac colostomy was performed in 52% of cases,

while anterior colorectal resection with low colorectal anastomosis was performed in 48% of cases. In our series, rectal tumors were locally advanced in 68% of cases, with R0 resection in 88% of cases. The pTNM classification was as follows:

pTNM	Number	Percentage
T2	8	32%
T3	15	60%
T4	2	8%
N0	18	72%
N1	7	28%
M0	18	72%
M1	7	28%

Intraoperative hemorrhage and colonic perforation were surgical complications occurring in 8% and 4% of cases, respectively. Early post-operative complications included wound infections in 40% of cases and urinary complications in 20% of cases. Late complications included digestive complications such as sphincter hypotonia, repeated bowel movements, and hernias, as well as sexual complications such as sexual impotence and retrograde ejaculation. Tumor recurrence and metachronous hepatic metastasis were observed during follow-up imaging six months after surgery. The postoperative mortality rate was 12%, with two patients experiencing hemorrhage and the third peritonitis, requiring surgical revision. No patients were lost to follow-up during the study.

Postoperative Mortality in Our Study :

Patient	*Cause*	*Time*
1	*Hemorrhage*	*H4*
2	*Hemorrhage*	*J32*
3	*Peritonitis*	*J7*

Discussion

Through the literature review, we concluded that 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 (Raphoz, 2007). Despite a current downward trend in the incidence of postoperative complications after rectal surgery (35% morbidity and 3.4% mortality according to the French Association of Surgery) (Alves, 2005), we observed a higher morbidity and mortality rate in our series at 40.3% and 12%, respectively. This disparity may be attributed to the limited size of our sample.

Postoperative mortality rate of rectal surgery across different literature series :

Study	*Sample size*	*Percentage*
Konate Dakar 2012 [4]	*8*	*12.2%*
Keita Mali 2017 [5]	*16*	*8%*
Verdin Belgique 2016 [6]	*15*	*16.8%*
Our study	*25*	*12%*

Risk factors identified in our study, such as age, smoking, diabetes, and hypertension, were consistent with those described in the literature. 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. Early post-operative complications mainly involved wound infections and urinary complications (Kin, 2013), 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. Rectal surgery mortality is mainly related to anastomotic leakage and the type of treatment (Arezzo, 2013), especially abdominoperineal amputation. Preventing complications involves a multidisciplinary approach, including optimal patient preparation, close postoperative monitoring, and appropriate complication management.

Conclusion

Despite advances in rectal surgery techniques, it remains associated with significant morbidity and mortality. Therefore, 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.

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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