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A retrospective study of middle- lower rectal malignancy resolved by trans anal total mesorectal excision after neoadjuvant chemo-irradiation

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ABSTRACT

Rectal cancer still one of frequent GIT malignancy in many countries. Chemotherapy, surgery and radiotherapy are necessary for management. The study aimed to evaluated retrospectively, the course of surgery, chemotherapy, and radiotherapy management of middle- lower rectal tumour. A retrospective cohort study which included 25 patients of both genders and different age who visit the outpatient clinics from May 2017 to March 2021. All patients were undergoing full history and examination, include age, gender, and CCRT. Rectal tumour basic information also have been collected. All patients received CCRT as 50.4 (G) over 28 fractions (daily) for 5 weeks with Capecitabine (Xeloda®) tables, however, surgery performed 4 weeks-6 weeks after last CCRT cycle. This study enrolled 25 patients (12 males (48%) and 13 females (52%)) with a mean age of 46.72 years ± 12.25 years. Out of 25 cases, 17 (68%) of cases were adenocarcinoma. Advanced stage III was common recorded in (13, 52%). In relation to site, tumours located in middle in 68%, while other located in lower rectum in 32%. Margins resected distally in 7-patient (28%), and proximally in 19-patients (72%). The complications include leakage (24%), ileus (4%), obstruction (8%), and fever (64%). All patients received neoadjuvant CCRT (100%). TME beyond CCRT are the promising management modality for locally advances rectal cancer. Adenocarcinoma local advanced stage III, and middle rectal mass is the commonest features of rectal cancer.

Key words: rectal cancer, CCRT, CRC, TME, margin resection

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INTRODUCTION

Colorectal Carcinoma (CRC) is the most common malignancy of GIT, effect both genders. Markedly, the CRC incidence has been rising following socio-economic development and industrialization, and it is the third leading cause of deaths globally [1-4]. In 2021, there were 1,931,590 new cases of colo-recto-anal cancer and 935,173 new deaths related to these cancers according to GLOBOCAN [1]. Chemotherapy, surgery and radiotherapy are necessary for management. Surgery is the main choice of treatment of colorectal cancer, and the main procedure is Total Mesorectal Excision (TME), which lead to significant improvement of the outcome [5].

Most of surgeons faces a significant technical challenge when surgical resection of rectal cancer done, and in particular in lower rectal cancer [6-9]. Limited access, narrow spaces of bony pelvis, damage to neurovascular organs, patient, tumour-related factors can impact an oncological perfect dissection [7-9]. More literatures have proven the advantages of TME beyond chemo-irradiation [10-13].

We evaluated retrospectively, the course of surgery, chemotherapy, and radiotherapy management of middle-lower rectal tumour.

METHODS

Study design and setting

A retrospective cohort study which included 25 patients of both genders and different age who visit the outpatient clinics from May 2017 to March 2021. The study was explained for all patients enrolling and all of them signed a written consent.

Inclusion criteria:

1. Resectable mid - low rectal tumour.
2. Non metastatic CRC.
3. Neoadjuvant CCRT.

Exclusion criteria:

1. Irresectable tumour mass
2. Inoperable tumour
3. Previous abdominal surgery

4. Patients refuse signed a written consent.
5. Obstructed tumour
6. Perforated masses.
7. Comorbidities.

PROCEDURES

All patients were undergoing full history and examination, include age, gender, and CCRT. Rectal tumour basic information also have been collected. All patients received CCRT as 50.4 Gray (G) over 28 fractions (daily) for 5 weeks with Capecitabine (Xeloda®) tables, however, surgery performed 4 weeks-6 weeks after last CCRT cycle. Preoperatively, rectal enemas before surgery, antibiotics, stop all medications, anti-thromboembolism agents, and stop solid diet were applied. Patient positioning and fixation, IV lines, cardiac monitoring leads, ventilator connections and urinary catheter performed. Postoperatively, counselling, adequate fluid supplement, pain management, oral feeding, and mobilization were performed.

STATISTICAL ANALYSIS

Data were coded and analysed using the Statistical Package for the Social Sciences (SPSS) version 24 (IBM Corp., NY, USA). Mean, standard deviation, and median, used in quantitative data and frequency and percentage used for categorical data.

RESULTS

This study enrolled 25 patients 12 males (48%) and 13 females (52%) who were received CCRT and underwent surgical resection as a treatment for middle and lower rectal cancer with a mean age of 46.72 years ± 12.25 years. Out of 25 cases, 17 (68%) of cases were adenocarcinoma. Advanced stage III was common recorded in 13, 52%, whereas early stages I and II were presented in 16% and 32%, respectively. In relation to site, tumours located in middle in 68%, while other located in lower rectum in 32%. Surgery accompany by anastomosis in 6-patients (24%), whereas diversion applied in 76% of patients. Margins resected distally in 7-patient (28%), and resected proximally in 19-patients (72%). We recorded some complications, include leakage (24%), ileus (4%), obstruction (8%), and fever (64%). All patients received neoadjuvant CCRT (100%) (Table 1).

DISCUSSION

Rectal cancer still one of frequent GIT malignancy in many countries. Management modalities underwent a major change by different perspectives through the last 20th centuries [11, 12]. Neoadjuvant CCRT, particularly in locally advanced stage, in addition to good surgical technique as Total Mesorectal Excision (TME) with sphincters preservation are the most technique perform [9, 13]. Several radiotherapists, oncologists, and surgeons preferred this protocol over other due to better outcomes, defined both resection margins, fewer retrieved nodes, and achieve good quality [5-8].

In this study, we enrolled 25 patients who were received CCRT and underwent surgical resection 12 male (48%) and 13 females (52%) with a mean age of 46.72 years ± 12.25 years. Adenocarcinoma local advanced stage III, and middle rectal mass is the commonest features of rectal cancer.

Anastomosis in our reports done in 24%, whereas diversion applied in 76% of patients. Margins safety resected distally in 7- patient (28%), and proximally in 19-patients (72%). Tuech and his colleagues enrolled 56 patients had complete TME in 84% with distal safety margin of 1 cm, which different from our findings. Another study on 30 patients with CRC by Rouanet et al, reported the TME used 100% the study after CCRT, the distal margin was 0.9 cm, which is agree with what we reported. Whereas several studies dislike with our findings such as Muratore et al, Atallah et al and Buchs et al [14-18].

Tab. 1. Study variables

		No.	%
Age (years) 46.72 ± 12.25	22-35	2	8
	36-45	10	40
	46-55	9	36
	>55	4	16
Gender (M:F 1:1)	Male	12	48
	Female	13	52
Histopathology	Adenocarcinoma	17	68
	Mucoid	5	20
	Mixed	2	8
	Un-differentiation	1	4
Stages	I	4	16
	II	8	32
	III	13	52
Site	Middle	17	68
	Lower	8	32
Surgery	Anastomosis	6	24
	Diversion	19	76
Margin	Distal	7	28
	Proximal	18	72
Complications	Leakage	6	24
	Ileus	1	4
	Obstruction	2	8
	Neutropenic fever	16	64
CCRT	Yes	25	100
	No	0	0

We recorded some complications, include leakage (24%), ileus (4%), obstruction (8%), and fever (64%). All patients received neoadjuvant CCRT (100%). The complications rate was high as 26% in study by Tuech et al, Muratore et al, and Buchs et al [14, 16, 18]. However, the rate was too very high in Atallah et al study reaching 65%. Rouanet et al concluded that complications rate was: 10% intra operative and 30% postoperative [17, 15].

STUDY LIMITATIONS

Small sample of patients, and shorter period of follow-up represented the two major limitations.

CONCLUSION

TME beyond CCRT are the promising management modality for locally advances rectal cancer. Adenocarcinoma local advanced stage III, and middle rectal mass is the commonest features of rectal cancer.

FUNDING STATEMENT

None.

COMPETING INTEREST STATEMENT

The author declares no conflict of interest.

ETHICAL APPROVAL

The study was conducted following the protocol of the ethical committee and written informed consent was obtained from all the participants.

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