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Ahmed Mohammed
surgical oncology,Damanhour Oncology Center, Albeheira, Egypt, ahmedali099151@gmail.com

ayman Abdul-mohaymen
Department of General Surgery, Al-Azhar University, Cairo, Egypt, aymanmehy4@gmail.com

magdy Hussain
Department of General Surgery, Al-Azhar University, Cairo, Egypt, drmagdysalah@hotmail.com

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Evaluation of Coloanal Anastomosis after Resection Low Rectal Cancer

Surgical Oncology

Ahmed Ali Mohammed[1] MSc, Ayman Mohammed Abdul-mohaymen[2,*] MD, Magdy Salah El-Din Hussain[2]MD

*Corresponding *Author:*
Ahmed Ali Mohammed
ahmedali099151@gmail.com

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1Surgical Oncology Departement, Damanhour Oncology Center, Albeheira, Egypt

2General Surgery Departement, Al-Azhar University, Cairo, Egypt

Abstract

Background: Advances in surgical techniques and multimodal treatment have led to the possibility of sphincter preservation in patient who have traditionally required abdominoperineal resection (APR) in the past.
Objective: Evaluation of Coloanal Anastomosis after Resection Low Rectal Cancer.
Patients and Methods: This study of case series included a total 10 patients who underwent total mesorectal excision and colo-anal anastomosis attending at Damanhur Oncology Center.
Results: As regard histopathology, 3 patients (3%) showed well differentiated adenocarcinoma and 7 patients (70%) showed moderately As regard TNM staging, 1 patient (1%) .differentiated adenocarcinoma was T1N0M0, 3 patients (30%) were T3N0M0, 2 patients (20%) were T3N1M0 and 4 patients (40%) were T3N2M0.
Conclusion: The ISR and CAA technique provides an opportunity to perform sphincter saving surgery in treatment of distal rectal cancer. This technique performs with acceptable functional outcomes.

Keywords: Ano-Rectal; Resection; Cancer.

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INTRODUCTION

The primary goal for the surgical treatment of rectal cancer is to achieve an oncologic cure while preserving function. Total mesorectal excision (TME) is the standard surgical procedure for rectal cancer. The concept of TME is the elimination of potential sources of local recurrence by completely excising the mesorectum through sharp pelvic dissection.[1, 2]

However, surgical treatment for low rectal cancer remains challenging, particularly with regard to the preservation of the anal sphincter. Anatomically, the mesorectum disappears at a distance of 1-2 cm above the anorectal sling, and only the rectal wall remains to the anal hiatus. Thus, there are greater risks of direct tumor invasion of the adjacent structures and of a positive circumferential resection margin (CRM) in low rectal lesions.[3]

Advances in surgical techniques and multimodal treatment have led to the possibility of sphincter preservation in patient who have traditionally adequate preoperative sphincter function and continence. required abdominoperineal resection (APR) in the past. In this regard, intersphincteric resection (ISR) and colo-anal anastomosis (CAA) has been described by Schiessel.[4] As the definitive surgical technique for anal sphincter preservation, and now, ISR in combination with preoperative chemo radiation therapy (CRT) is increasingly being performed in patient with low rectal cancers.

PATIENTS AND METHODS

This study included a total 10 patients who underwent total mesorectal excision and colo anal anastomosis attending at Damanhur Oncology Center. Approval of the ethical committee and a written informed consent from all the subjects were obtained. This study conducted between November 2018 and November 2019, including the follow up time.

Inclusion criteria:
Tumor's distance < 5 cm from anal verge down to the dentate line, the tumor restricted to the rectal wall or internal sphincter, Absence of distant metastasis, well / moderate differentiated tumor an

Exclusion criteria:
Patient unfit for major surgery, Patients unwilling to take part in the study, Emergent operation were

performed for intestinal obstruction or acute bleeding and recurrent tumor.

Surgical technique

The gold standard of rectal cancer surgery is total mesorectal excision (TME) which introduced by Heald.[5] with reconstruction by coloanal anastomosis: Straight tube CAA can be performed using the double stapled technique, or a hand sewn anastomosis can be performed transanally.[6]

Statistical analysis:

Data were analyzed using Statistical Program for Social Science (SPSS) version 20.0. Quantitative data were expressed as mean ± standard deviation (SD). Qualitative data were expressed as frequency and percentage. Mean (average): the central value of a discrete set of numbers, specifically the sum of values divided by the number of values. Standard deviation (SD): is the measure of dispersion of a set of values. A low SD indicates that the values tend to be close to the mean of the set, while a high SD indicate that the values are spread out over a wider range.

RESULTS

We included 10 cases of low rectal cancer. The demographic data of this patients were summarized in table 1.

This table shows the description of demographic data in studied patients. As regard age, the mean age of studied patients was 47.5 ± 19.2 years with minimum age of 27 years and maximum age of 67 years (range 27 – 67). As regard sex, there were 6 males (60%) and 4 females (40%) in the studied patients. As regard BMI, the mean BMI of studied patients was 25.4 ± 5.2 (kg/m^2) with minimum BMI of 21.3 (kg/m^2) and maximum BMI of 29.6 (kg/m^2) (range 21.3 – 29.6).

Variables		Studied patients (N = 10)	
Age (years)	**Mean ±SD**	47.5 ±19.2	
	Min - Max	27 – 67	
Sex (n, %)	**Male**	6	60%
	Female	4	40%
BMI (kg/m^2)	**Mean ±SD**	25.4 ± 5.2	
	Min - Max	21.3 – 29.6	

Table 1: Demographic data of the studied patients among the included patients of this study the early post-operative complication were summarized in table 2

Variables		Studied patients (N = 10)	
Local complications	**Hemorrhage**	0	0%
	Leakage	2	20%
	Wound infection	3	30%
	Burst abdomen	1	10%
	Ileus	3	30%
General complications	**MI**	1	10%
	Pneumonia	2	20%
	DVT	1	10%
	UTI	2	20%

Table 2: Post-operative complication among studied patients; this table shows the description of early post-operative complications in studied patients.

As regard local complications, leakage occurred in 2 patients (20%), wound infection occurred in 3 patients (30%), Burst abdomen occurred in 1 patient (10%), Ileus occurred in 3 patients (30%) while hemorrhage had not occurred in our patients.

As regard general complications, MI occurred in 1 patient (10%), pneumonia occurred in 2 patients (20%), DVT occurred in 1 patient (10%) and UTI occurred in 2 patients (20%).

Variables		Studied patients (N = 10)	
Late complications	**Recurrence**	0	0%
	Stenosis	2	20%
	Fistula	2	20%

Table 3: Late postoperative complications among studied patients

This table shows the description of late post-operative complications in studied patients. Stenosis occurred in 2 patients (20%), Fistula occurred in 2 patients (20%), while recurrence had not occurred in any patient.

Variables		Studied patients (N = 10)	
Histopathology	**Well differentiated AC**	3	30%
	Moderately differentiated DC	7	70%
TNM staging	**T1 N0 M0**	1	10%
	T3 N0 M0	3	30%
	T3 N1 M0	2	20%
	T3 N2 M0	4	40%

Table 4: TNM staging and histopathology in studied patients

This table shows the description of histopathology and TNM staging in studied patients. As regard histopathology**,** 3 patients (3%) showed well

differentiated adenocarcinoma and 7 patients (70%) showed moderately differentiated adenocarcinoma. As regard TNM staging, 1 patient (1%) was T1N0M0, 3 patients (30%) were T3N0M0, 2 patients (20%) were T3N1M0 and 4 patients (40%) were T3N2M0.

CONCLUSION

The ISR and CAA technique provides an opportunity to perform sphincter saving surgery in treatment of distal rectal cancer. This technique performs with acceptable functional outcomes. Moreover, if the adequate distal margin is provided, the local recurrence and survival rates after CAA may even be better than those of APR. The CAA technique should be considered as a safe procedure and a valuable alternative to APR in selected patients with distal rectal cancer. Further research is needed to fully clarify the effects of different modifications (preoperative CRT, ISR-subtype, type of coloanal anastomosis) to the ISR procedure on oncological and functional outcome and quality of life.

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