International Journal of Medical Research Professionals
P-ISSN: 2454-6356; E-ISSN: 2454-6364
DOI: 10.21276/ijmrp

IJMRP

Original Research Article.

The Demographic Profile and Operative Findings after Conventional Surgery in Rectal Cancer Patients

Mahboobur Rahman[1*], Md. Abdul Hadi[2], Md. Abul Kalam Azar[3], Mohammad Nur E Alam Mazumdar[4], Md. Masud Sattar[5], Sabina Parveen[6], Md. Mahmudur Rahman[7]

[1*]MS (Surgery), Senior Consultant (Surgery), 250 Bedded District Hospital, Kishoreganj, Dhaka, Bangladesh.
[2]MS (Surgery), Senior Consultant (Surgery), 100 Bedded Sadar Hospital, Lalmonirhat, Bangladesh.
[3]MS (Surgery), Assistant Professor, Dept. of Surgery, Shaheed Ziaur Rahman Medical College, Bogra, Bangladesh.
[4]Medical Officer, Surgery, 250 Bedded General Hospital, Chandpur, Bangladesh.
[5]MS (Surgery), Assistant Professor, Department of Surgery, Khulna Medical College, Khulna, Bangladesh.
[6]Assistant Professor, Dept. of Gynae & Obs., US- Bangla Medical College & Hospital, Rupganj, Dhaka, Bangladesh.
[7]Deputy Director (CS) & Program Manager (SD),
CCSPD, Directorate, General of Family Planning, Karwan Bazar, Dhaka, Bangladesh.

ABSTRACT

Objective: In this study our main goal is to evaluate the demographic profile and operative findings after conventional surgery in rectal cancer patients.

Method: This quasi experimental study was carried out at The department of General Surgery and Colorectal unit of Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka and Somorita Hospital, Dhaka from July 2005 to June 2007 where patients who having carcinoma involving the middle and lower third of the rectum were evaluated. During the study patients were divided into two groups: Group A: Patients undergone total mesorectal excision (TME) and Group B: Patients undergone conventional operative method. All patients were operated under general anesthesia, placed in Lloyd- Davies position.

Result: In the study, most of the patients belong to 21 - 30 years age group and 46.7% patients of Group-A and 56.6% of Group-B were males. The rest 52.8% of Group-A and 43.4% of Group-B were females. Sexual function preoperatively well maintained in 50 (94.3%) patients of group A and 51 (96.2%) patients of group B. Also, local recurrence rate in Group A rate was 5.7% and in group B was 20.8%.

Conclusion: We can conclude that, for management of rectal cancer conventional surgery has some limitation which can affect the patient's recovery and health condition. Further study is needed for better outcome.

Keyword: Rectal Cancer, Conventional Operative Method, Total Mesorectal Excision (TME).

***Correspondence to:**

Dr. Mahboobur Rahman,
MS (Surgery),
Senior Consultant (Surgery),
250 Bedded District Hospital,
Kishoreganj, Dhaka, Bangladesh.

Article History:

Received: 03-04-2019, **Revised:** 01-05-2019, **Accepted:** 28-05-2019

Access this article online	
Website: www.ijmrp.com	Quick Response code
DOI: 10.21276/ijmrp.2019.5.3.038	

INTRODUCTION

Rectal cancer is the second most common cancer in large intestine around the world. The occurrence and the number of young patients diagnosed with rectal cancer have made it as one of the major health issues in the world. With regard to the enhanced access to and use of modern screening tools, a number of new cases are diagnosed each year. Since the location of the rectum and its adjacent organs, management and treatment of rectal tumor is different from tumors located in other parts of the gastrointestinal tract or even the colon.[1] Colorectal carcinoma is the fourth most common variety of malignant tumor found in women and its frequency in men is surpassed only by carcinoma of the bronchus.

Overall, it is the second most common carcinoma in Western countries. The rectum is the most frequent site involved having an incidence of about 38%. Adenocarcinoma is the roost common histologic variety responsible for more than 90% of the cases.[2]

Surgery is a common treatment for rectal cancer, even in the presence of wide spread metastases.[2] Surgical options for carcinoma rectum are anterior resection, abdomino-perineal resection, hartmanns operation.[3] A rectal cancer arising in the

upper rectum or distal sigmoid colon is removed at high anterior resection. An anterior resection is performed to excise a tumor in the middle third of the rectum.

In recent years, cancer surgery has witnessed an increased focus on preserving function and quality of life. The development of total mesorectal excision (TME) and autonomic nerve preservation in the treatment of rectal cancer offers excellent example of this philosophy. Since the introduction of TME- based operations two decades ago, patients undergoing the procedure have experienced a much greater survival rate, significantly lower rates of local recurrence and higher rates of both sphincter preservation and preservation of sexual and urinary functions than conventional procedure

One study stated that the major problem in the treatment of rectal carcinoma is local recurrence. The highest incidence has been reported in studies of so called conventional resection that entails blunt non standardized dissection.[4]

In this study our main objective is to evaluate the demographic profile and operative findings after conventional surgery in rectal cancer patients.

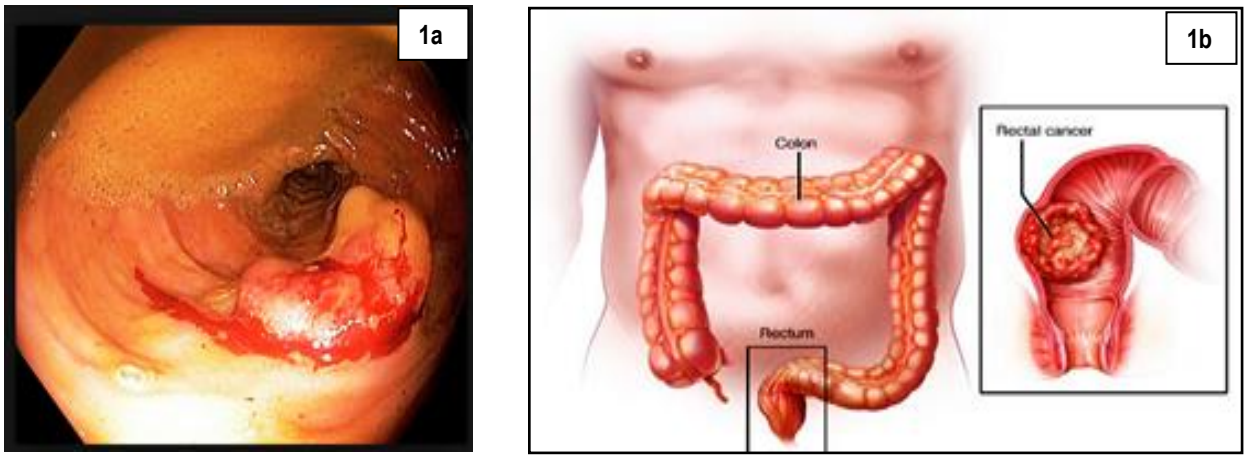

Figure-1a and 1b: Rectal cancer in patients.[5]

OBJECTIVE

General Objective

To evaluate the demographic profile and operative findings after conventional surgery in rectal cancer patients.

Specific Objective

- To identify location of tumor (third) in the rectum.
- To detect incontinence of flatus of the patients

METHODOLOGY

Type of Study

Quasi experimental study

Place of Study

The department of General Surgery and Colorectal unit of Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka and Somorita Hospital, Dhaka.

Study Period

July 2005 to June 2007.

Study Population

Patients having carcinoma involving the middle and lower third of the rectum. Total 106 Patients were included in study. Among them 53 patients underwent total mesorectal excision (TME) and another 53 patient's underwent conventional technique.

Sampling Technique

Purposive

Inclusion Criteria

- Histologically proved rectal carcinoma of middle or lower third of rectum after colonoscopy/excision biopsy.
- Disease stage-DUKE- A or B or C1
- Mobile tumor
- Middle &/or lower third involvement of rectal cancer
- Resection performed by laparotomy.

Exclusion Criteria

- Patients, who refused to be included in the study
- Evidence of distant metastasis by clinical or radiographic examinations
- Presence of concurrent other malignant diseases
- Follow-up was not achievable.

Method

- Informed consent was taken from each patient in the consent form after they were properly informed about the treatment procedure, expected results and possible complications. Detailed history was taken, clinical examination and proper investigations was done for each patient and was recorded in pre-designed data collection sheet. During the study patients were divided into two groups: Group A: Patients undergone TME and Group B :Patients undergone conventional operative method. All patients were operated under general anesthesia, placed in Lloyd- Davies position. Following two techniques were used:
- One was total mesorectal excision (TME), which demands sharp meticulous dissection along avascular plane immediately adjacent to the mesorectum, under direct vision.
- Another was conventional operative procedure, in which blunt dissection was done without direct vision and usually performed by surgeons who are not familial to total mesorectal excision (TME).
- Routine follow-up evaluations in this study were conducted at 3 months, at 6 months and at 12 months interval from the date of primary operation. All patients were advice to come in BSMMU, department of surgery, for follow up according to the above time schedule. They were also advice to come whenever they develop any complications. Each follow up

was including history, physical examination and relevant investigations, such as USG of whole abdomen or CT scan of abdomen if recurrence suspect, chest X-ray, bone X- ray or isotope bone scan, serum CEA level, sigmoidoscopic or colonoscopy biopsy etc.

Statistical Analysis

Statistical analyses of the results were obtained by using window based computer software devised with Statistical Packages for Social Sciences (SPSS-13) (SPSS Inc, Chicago, IL, USA). All the relevant collected data were compiled on a master chart first. The results were presented in tables.

Figures. Diagrams. Percentages were calculated to find out proportion of the findings. Statistical analyses were done by using appropriate procedure like chi square test, student t test where applicable. Statistical significance is set at 0.05 level and confidence interval at 95% level.

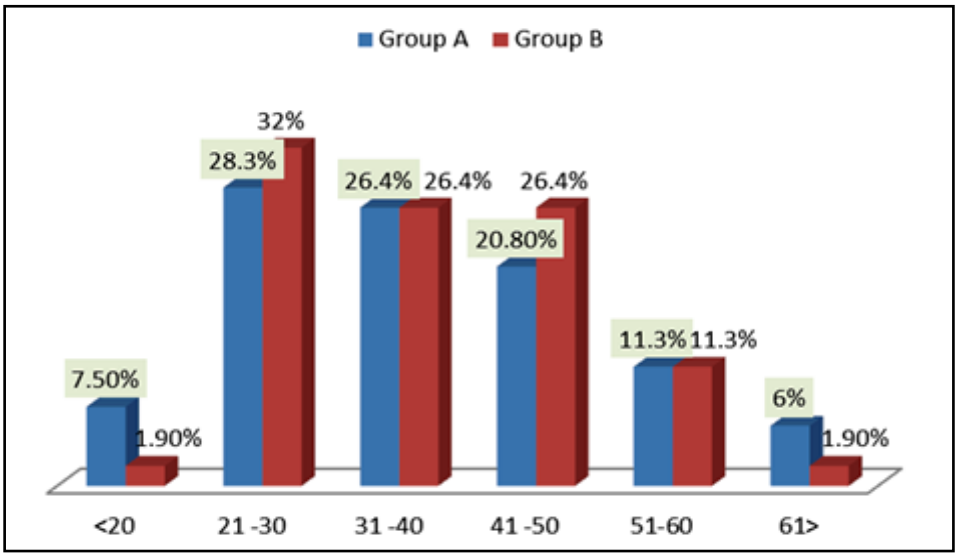

Figure 2: Age distribution of the patients.

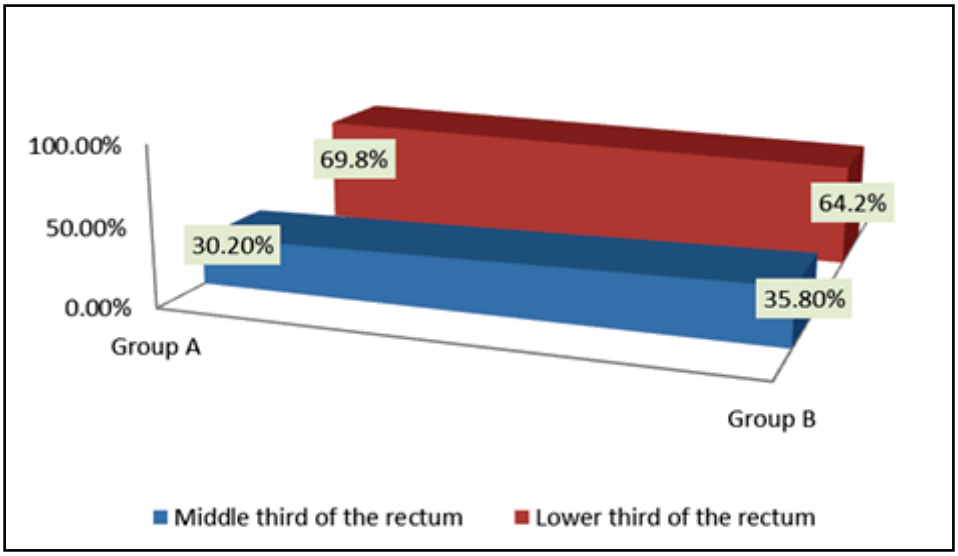

Figure 3: Location of tumor (third) in the rectum of both groups of patients

Table 1: Gender distributions of the patients

Sex	Group A (TME) (n=53)	Group B (Conventional) (n=53)	P value
Male	25 (47.2)*	30 (56.6)	0.331
Female	28 (52.8)	23 (43.4)	
Total	53 (100.0)	53 (100.0)	

Table 2: Blood loss during operation of the patients of both groups (n=106)

Blood loss (cc)	Group A (TME)	Group B (Conventional)	Total	t value	P value
Mean± Std.	357.55143.18	486.04149.66	421.79179.45	14.213	<0.001
Deviation Range	300-450	310-550	300-550		

RESULTS

In figure-2 shows age distribution of the patients where in Group-A (TME) (28.3) patients were between 21 - 30 years of age followed by 26.4% between 31-40 years, 20.8% between 41-50 years, 11.3% between 51-60 years, 7.5% below 21 years age and 5.7% above 60 years of age. In Group-B (Conventional) (32.1) patients were between 21-30 years of age followed by 26.4% between 31 - 40 years, 26.4% between 41-50 years, 1.9 below 21 years age and 1.9 above 60 years of age.

In table-1 shows gender distributions of the patients where 46.7% patients of Group-A and 56.6% of Group-B were males. The rest 52.8% of Group-A and 43.4% of Group-B were females. No significant difference was observed between groups with respect to sex (p >0.05).

In figure-3 shows location of tumor (third) in the rectum of both groups of patients where in Group-A, (69.8%) respondent's involved site were in lower third of the rectum and rest (30.2%) respondent's involved site were in middle third of the rectum. In Group-B, (64.2%) respondent's involved site was in lower third of the rectum and rest (35.8%) respondent's involved sites were in middle third of the rectum. No significant difference was observed between groups in term of location of the lesions (p > 0.05).

In table-2 shows blood loss during operation of the patients of both groups (n=106) where the mean blood loss during operation of Group-A and Group-B were 357.55 ± 43.18 and 486.04 h 49.66 cc respectively. Highly significant difference was observed between groups with respect to blood loss during operation (p <0.001).

In table-3 shows distributions of patients according to sexual function preoperatively where it was well maintained in 50 (94.3%) patients of group A and 51 (96.2%) patients of group B, pre-operatively. Three (5.7%) patients of group A and 2 (3.8%) patients of group B were functionally inactive due to their old age. Fisher exact test was done. No significant difference was observed between groups with respect to sexual function pro operatively (p>0.05).

In figure-4 shows sexual function of the patients of both groups post operatively where 94.3% patients of group A and 84.9% patients of group B had normal sexual function after operation. 5.7%patients of group A and 15.1% patients of group B were unable to maintain normal sexual activity alter operation. No significant difference was observed between groups with respect to sexual activity (p>0.05).

In table-4 shows incontinence of flatus of the patients where in group A, incontinence of flatus was present in 43 (100.0%) patients in 1st follow up and same number in final follow up. In group B, continence of flatus was present in 4 (100%) patients in 1stfollow up but absent in final follow up. Significant test (chi-square) could not be performed as whole cells of a row contained 0 value.

Table-3: Distributions of patients according to sexual function preoperatively

Sexual Function Preoperatively	Groups of the patient		I* value
	Group A	Group B	
Well Maintained	50 (94.3)	51 (96.2)	
Sexually Inactive	3 (5.7)	2 (3.8)	1
Total	53 (100.0)	53 (100.0)	

Table 4: Incontinence of flatus of the patients

Incontinence of flatus		Group A (TME, n=43)	Group B (Conventional, n=4)
1st follow up	Present	43 (100.0)	4 (100.0)
	Absent	0 (.0)	0 (.0)
Final follow up	Present	0 (.0)	0 (0)
	Absent	43 (100.0)	4 (100.0)

Table-5: Motion frequency of the patients

Frequency at Isl follow up	Motion/24 hours	Group A (TME)	Group B (Conventional)	p value
	3-5	18(41.9)	4 (100.0)	0.04
	6-10	25 (58.1)	0 (.0)	
Frequency at final follow up	1-2 motion	18(40.9)	4(100.0)	
	3-5	25 (58.1)	0 (.0)	

In figure-5 shows incontinence of fecal matter where n group A, incontinence of fecal matter was present in (100.0%) patients during 1stfollow up. In final follow up, incontinence of fecal matter was present in similar number of patients. In group B, incontinence of fecal matter was present in (100.0%) patients in 1stfollow up but all of them absent in final follow up.

In table-5 shows where motion frequency of the patients where in group A. 3-5 motions were in 41.9% and 6-10 motions were in 58.1% patients during 1stfollow up. In final followup. 1-2 motions were in 40.9% patients and 3-5 motions were in 25 (58.1%) patients. In group B, 3-5 motions were in 100.0% patients during 1st follow-up.

In figure-6 shows local recurrence rate of the patients where in Group A rate was 5.7% and in group B was 20.8%.

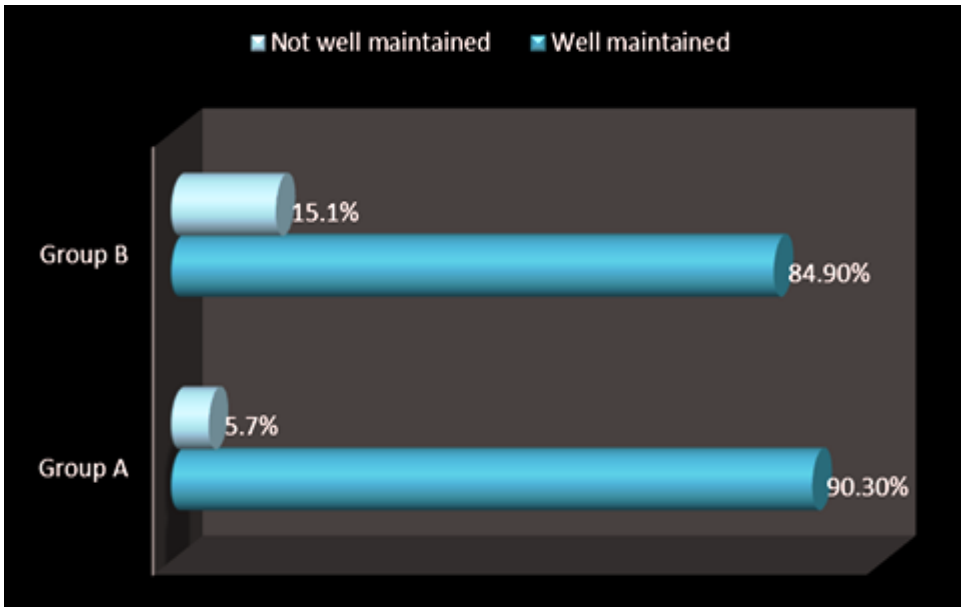

Figure 4: Sexual function of the patients of both groups post operatively

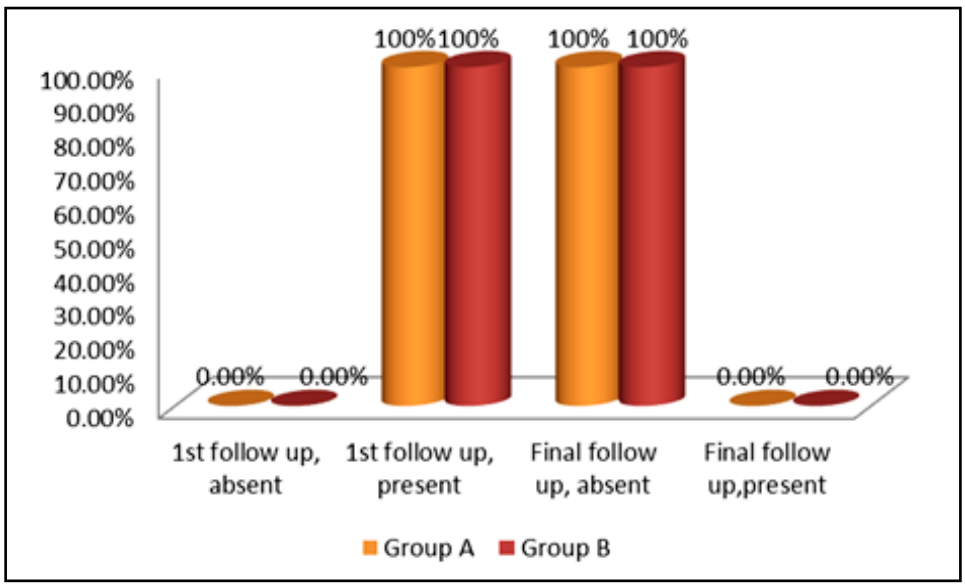

Figure 5: Incontinence of fecal matter of the patients.

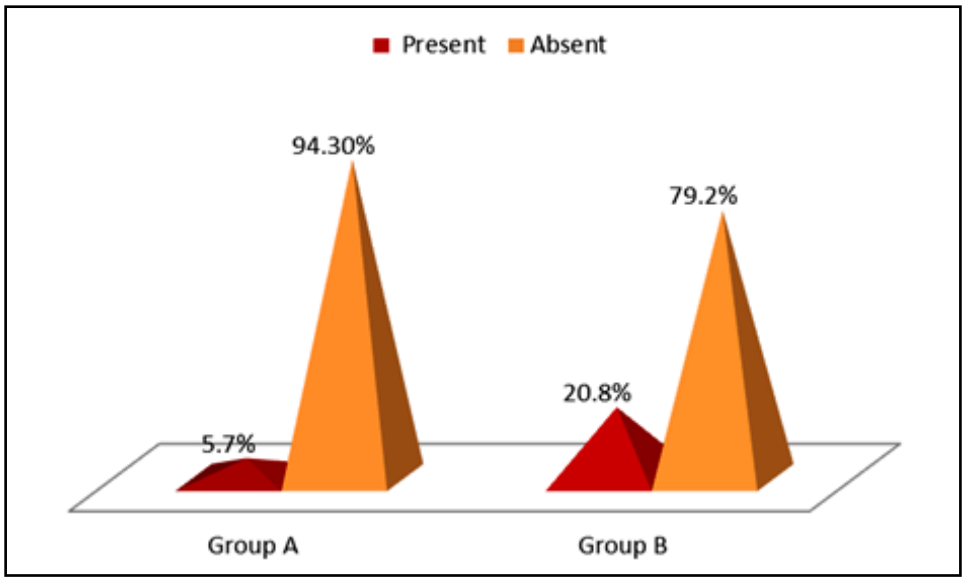

Figure 6: Local recurrence rate of the patients

DISCUSSION

During the study patients were divided into two groups. 53 patients treated by total mesorectal excision (TME) were in group-A and another 53 patients treated by conventional method were in group-B. In the study we found that in Group-A (TME) 15 (28.3) patients were between 21 - 30 years of age followed by 26.4% between 31-40 years, 20.8% between 41-50 years, 11.3% between 51-60 years, 7.5% below 21 years age and 5.7% above 60 years of age. In Group-B (Conventional) 17 (32.1) patients were between 21-30 years of age followed by 26.4% between 31 - 40 years, 26.4% between 41-50 years, 1.9 below 21 years age and 1.9 above 60 years of age. 46.7% patients of Group-A and 56.6% of Group-B were males. The rest 52.8% of Group-A and 43.4% of Group-B were females.

Location of tumor (third) was important because of total mesorectal excision (TME) was performed in middle or lower third of rectal tumor.[6] In case of upper third rectal tumor mesorectal excision is performed only up to 5 cm distally from the lower end of tumor, which is actually a partial mesorectal excision.[7] According to the Cancer Registry of Norway; i.e. 7 cm or less from the anal verge, low rectum; over 7cm but less than or equal to 12 cm, mid rectum; over 12 cm but less than or equal to 20 cm, upper rectum.[8] In our study regarding location of tumor, no significant difference was observed between the patients of two groups. In group A, lower third involvement was present in 37. (69.8) patients and in group B 34 (64.2) patients and it was the maximum presenting figure, followed by middle third involvement in 16 (30.2) patients of group A and in 19 (35.8) patients of group B. So in our study most of the tumor location was in the lower third of the rectum.

In the present study, sexual function was well maintained in 50 (94.3%) patients of group A and 51 (96.2%) patients of group B, pre-operatively. Three (5.7%) patients of group A and 2 (3.8%) patients of group B were functionally inactive due to their old age. No significant difference was observed between groups with respect to sexual function pre operatively ($p>0.05$).

Fifty (94.3%) patients of group A and 45 (84.9%) patients of group B had normal sexual function after operation. 3 (5.7%) patients of group A and 8 (15.1%) patients of group B were unable to maintain normal sexual activity after operation. No significant difference was observed between groups with respect to sexual activity ($p > 0.05$

During I^{s1} follow up flatus and fecal incontinence was present in (100.0%) patients of group A who undergone ultra-low anterior resection and LAR and (100.0%) patients of group B who undergone LAR and AR. During final follow up these patients became continent to flatus and fecal matter.

In group A, urgency was present (100.0%) patients during I^{sl} follow up and (58.14%) patients during final follow up. In group B, urgency was present in (100.0%) patients during P^{l} follow up, but in final follow up no patient had urgency ($p> 0.05$). Regarding urgency all sphincter preserved patients had this problem during I^{sl} follow up. But in final follow up 25 (58.14%) patients who got ultra-low anterior resection had this problem.

Regarding motion frequency per 24 hours, in group A, 3-5 motions were in (41.9%) and 6-10 motions were in (58.1%) patients during 1st follow up. In final follow up, 1-2 motions were in (40.9%) patients and 3-5 motions in (58.1%) patients.

In group B, 3-5 motions were in (100.0%) patients during $I^{s'}$ follow up. In final follow up, 1-2 motions were present in (100.0%) patients. Significant difference was observed between groups in terms of motion frequency ($p<0.05$).

Local recurrence rate in Group A was observed in (5.7%) patients and in group B (20.8%) patients. Significant difference was observed between groups with respect to local recurrence rate ($p > 0.05$).

CONCLUSION

From our result we can conclude that for management of rectal cancer conventional surgery has some limitation which can affect the patient's recovery and health condition. Further study is needed for better outcome.

REFERENCES

1. Beets-Tan RG, Beets GL. Rectal cancer: review with emphasis on MR imaging. Radiology. 2004 Aug; 232(2):335-46.
2. Russell RCG, Norman SW, 2004, Bailey & Loves Short Practice of Surgery, 24thedn, Arnold, London,
3. Farquharson M, Moran B, 2005, In Farquharson's Text Book of Operative Surgery, 9thedn, Plodder education, London, 403-05.
4. Kapiteijn E, Putter IT, van de Vedle CJFI, cooperative investigators of the Dutch Colo Rectal Cancer Group, 2002, 'Impact of the introduction and training of TME on recurrence and survival in rectal cancer in The Netherlands', British Journal of Surgery, vol. 89, pp. 1142-1149.
5. General Information About Colon Cancer". NCI. May 12, 2014. Accessed on June 29, 2014
6. Ridgway PF, Dorzi AW, 2003, 'The role of total mesorectal excision in the management of rectal cancer', Cancer Control, 10(3), 205-11.
7. Wibe A, Rcndcdal PR, Svensson E, Norstcin J, Hide TJ, Myrvold III-', cl a I, 2002. Prognostic significance of the circumferential resection margin following total mesorectal excision for rectal cancer', British Journal of Surgery, 89, 327-34.
8. Mae Farlane JK, Ryall RDM, I leald RJ, 1993, Mesorectal exicion for rectal cancer', The Lancet, vol 34, pp. 457-60.

Source of Support: Nil.

Conflict of Interest: None Declared.

Cite this article as: Mahboobur Rahman, Md. Abdul Hadi, Md. Abul Kalam Azar, Mohammad Nur E Alam Mazumdar, Md. Masud Sattar, Sabina Parveen, Md. Mahmudur Rahman. The Demographic Profile and Operative Findings after Conventional Surgery in Rectal Cancer Patients. Int J Med Res Prof. 2019 May; 5(3):171-76. DOI:10.21276/ijmrp.2019.5.3.038