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Original Research Article

Management of carcinoma rectum in a tertiary care centre in Assam

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ABSTRACT

Background: Rectal cancer is one of the frequent human malignant neoplasms and the second most common cancer in large intestine. Colorectal cancers, as one of the major public health problems, is the third most common cancer in men and the second in women in the world with a lifetime probability of 4.7-5%. It has been reported as the third leading cause of death in men and women in the United States.
Methods: The study comprised of 40 cases of carcinoma rectum admitted in the seven surgical units of the department of surgery, Assam medical college and hospital, Dibrugarh, for a period of 1 (one) year from 2018 to 2019. The patients were selected based on the clinically suspected cases of carcinoma rectum and confirmation made upon by histopathological examinations and the necessary investigations. The patients were staged according to the TNM staging system.
Results: A total of 40 patients examined. In 34 of the total 40 patients (85%), the growth could be felt per rectally and sigmoidoscopic biopsy where taken which confirmed the diagnosis. In our study, 26 (65%) patients belonged to the stage III correlating with their late presentation, 10 (25%) stage II and 5 % in stage I and IV. The surgical management varied according to the presentation and the status of the patient.
Conclusions: In conclusion, a good clinico-pathological work-up in addition with adequate wide range of appropriate diagnostic interventions usage resulted in early diagnosis and timely surgical interventions and the necessary adjuvant therapies.

Keywords: Carcinoma rectum, Staging, Digital rectal examination

INTRODUCTION

Rectal cancers are the second most common (28%) cancers in large intestine after proximal colon cancers (42%).[1] Therefore, rectal cancers have always been considered as a part of colorectal cancer in related epidemiological studies. Colorectal cancers, as one of the major public health problems, is the third most common cancer in men and the second in women in the world with a lifetime probability of 4.7-5% (GLOBOCAN 2012).[2] It has been reported as the third leading cause of death in men and women in the United States. According to the recent data from the United States approximately 136,830 new cases of colorectal carcinoma are diagnosed annually, including 40,000 rectal cancers.[1] Rectal cancer is one of the frequent human malignant neoplasms and the second most common cancer in large intestine. Colorectal cancers (CRCs) are the second most common cancers in human and major public health problems worldwide.[2] Considering the different embryonic origin of the colon and the rectum, cancers arising from these two locations of the large bowel have several different distinctive features. The colon is arising from the midgut and the rectum from the hindgut. Gradient of hormone receptors are also different. These two serve different functions as well. The rectum is exposed to a more

concentrated fecal matter in a direct way. Moreover, undigested matter traveling through the colon is coated with alkaline mucus. The different levels of pH in the colon and rectum may also influence susceptibility to environmental factors. Therefore, different risk factors may be involved in these tumors.

With regard to the improved access to and use of screening treatment, overall incidence rate has decreased by approximately 3% per year during the past decade. Although a large drop in the number of rectal cancers has been found in adults aged 65 years and older, this rate has been seen to increase among young adults less than 50 years. In contrast to proximal and distal colon cancers, the median age at diagnosis for rectal cancers is younger (63 years in men and 65 years in women). There is also a significant variation in tumor location by age, with a notable decrease in rectal tumors in older age.[3]

Aim and objectives

This study aimed to assess the management of carcinoma rectum admitted in the department of general surgery, assam medical college and hospital, Dibrugarh from the examination findings to the staging of the disease and the treatment given.

METHODS

A prospective observational study was performed on all the patients of carcinoma rectum who were admitted in the department of general surgery in Assam medical college, Dibrugarh from June 2018 to May 2020. A total of 40 patients were evaluated in the study period. All patients below 20 were excluded from the study. Examination findings, diagnosis and treatment procedures were recorded in pre-determined proforma sheets based on clinical data (both primary and secondary data) as collected from the patient case records. Statistical analysis was done using Microsoft excel.

RESULTS

In 34 of the total 40 patients (85%), the growth could be felt per rectally and proctoscopic and in some instances, sigmoidoscopic biopsy could be taken which confirmed the diagnosis. In 6 cases, the growth could not be felt and sigmoidoscopic biopsy was opted for coming to the diagnosis. The average distance of the lower margin of the growth from the anal verge was 4.65 cm and the average upper margin of the growth from the anal verge was 7.56 cm (Table 1). Most common gross morphological findings were of protruding or proliferative type of 21 (52.50%) of the total cases (Table 2). The most commonly used staging method is the TNM Staging system which has been used for analysis. In our study, 26 (65%) patients belonged to the stage III correlating with their late presentation, 10 (25%) stage II and 5 % in stage I and IV (Table 3).

Out of the 40 cases, 34 (85%) were conventional adenocarcinomas, 3 (7.50%) cases were mucinous adenocarcinoma, 2 (5%) cases were signet cells adenocarcinoma and 1 case was of squamous cell carcinoma (Table 4).

Table 1: Distribution based on margin (n=40).

Margin (cm)	Lower margin		Upper margin	
	N	%	N	%
1-4	14	41.18	1	2.94
5-8	20	58.82	20	58.82
9-12	0	0.00	13	38.24
>12	0	0.00	0	0.00
Total	34	100.00	34	100.00
Mean±SD	4.65±2.22		7.56±3.15	

Table 2: Gross morphology (n=40).

Growth	N	%
Ulcerative	13	32.50
Proliferative	21	52.50
Stenosing	6	15.00
Total	40	100.00

Table 3: TNM staging (n=40).

Stage	N	%
I	2	5.00
IIA	7	25.00
IIB	2	
IIC	1	
IIIA	6	65.00
IIIB	12	
IIIC	8	
IVA	2	5.00
IVB	-	
IVC	-	
Total	40	100.00

Table 4: Histopathology of primary tumor (n=40).

Histopathology	N	%
Adenocarcinoma	34	85.00
Mucinous	3	7.50
Signet cell	2	5.00
Squamous cell carcinoma	1	2.50
Papillary	0	0.00
Others	0	0.00

In our study of 40 cases, diagnosed as carcinoma rectum, 3 were found to have inoperable disease with ascites and palpable hard non-tender liver (hepatic metastases). 37 patients received surgical treatment in the form of radical and palliative surgery. 5 patients had extensive pelvic side wall involvement that required, out of which 2 had undergone palliative APR, 3 of them had Hartmans procedure done. 6 patients presented with large bowel

obstruction, out of which 1 had liver metastasis and palliative colostomy was done, APR was done in 1 case, palliative anterior resection (AR) with diverting ileostomy was done in 1 case in which ovarian and uterine involvement were noted, diverting colostomy was done in 2 cases and palliative colostomy in 1 case. 2 patients presented with hollow viscus perforation with extensive pelvic side wall and urinary bladder and prostate involvement and had undergone Hartmans procedure. AR was done in a total of 11 patients (27.50%), APR was done in 17 patients (42.50%), Hartmans procedure in 5 (12.50%) and palliative colostomy in 2 cases (5%). The curative resection rate of total patients operated was 67.50%) (Table 5).

Table 5: Management.

Management	N	%
Surgery		
Curative surgery	27	67.50
Palliative surgery	10	25.00
Chemotherapy		
Preoperative	1	2.50
Adjuvant	36	90.00
Palliative	3	7.50
Radiotherapy		
Preoperative	0	0.00
Postoperative	13	32.50
Palliative	3	7.50

DISCUSSION

Rectal cancer is the second most common cancer in the large intestine. The prevalence and the number of young patients diagnosed with rectal cancer have made it as one of the major health problems in the world. With regard to the improved access to and use of modern screening tools, a number of new cases are diagnosed each year. Considering the location of the rectum and its adjacent organs, management and treatment of rectal tumour is different from tumours located in other parts of the gastrointestinal tractor even the colon. In the present study, carcinoma of rectum accounted for 0.4% of the total admissions in the surgery department during the study period.

Digital rectal examination

In the present study, 87.5% of the total patients, growth was felt during DRE. The mean distance of the lower margin of the tumor from the anal verge was 4.65 cm and the mean distance of the upper margin of the tumor from the anal verge was 7.56 cm as given in the (Table 1). Hamilton et al was able to palpate the growth in 51 (14.6%) of the cases.[4] According to Brown et al, DRE identified 22 out of 31 (71%) patients with favorable prognosis tumors.[5] The figures for digital rectal examination were 5 of 18 and 22 of 76 patients respectively and penetration of the rectal wall was correctly identified in 56 of 61 (91.8%) patients by digital rectal examination.[6] Houvenaeghel et al found 21 of 23 patients (91.3%) had palpable tumour through DRE.[7]

Our present study findings are consistent with Brown et al, Rafaelson et al, Houvenaeghel et al and Suryanarayana et al with insignificant variables.

Gross morphology

Most common gross morphological findings were of protruding or polypoidal type of 21 (52.50%) of the total cases (Table 2). Park et al found that among the 579 cases, the most common gross morphology was depressed type found in 341 patients (58.9%), followed by protruded type in 217 patients (37.5%) and flat type in 21 (3.6%) patients.[8] They also found that protruded type was of 58.3% in an asymptomatic patient. The finding in our study is consistent with the findings of Park et al with insignificant variations among other studies. This may be attributed to the late referral or presentation to the tertiary care centre from a primary care centre.

Histopathology

In the present study, 34 (85%) of the growth specimen on histopathological examination was conventional adenocarcinoma, second most common was the mucinous adenocarcinoma (7.50%). Most of them were moderately differentiated (Table 4). Hamilton et al found more than 90% of colorectal carcinomas are adenocarcinomas originating from epithelial cells of the colorectal mucosa.[9] Ponz de et al found most of these tumours are adenocarcinomas (96%) and in some cases, show a mucinous component.[10] Bohorquez et al found adenocarcinoma in 91.5%, mucinous carcinoma in 5.2% and signet ring cell carcinoma in 1.6%.[11] Our study findings are consistent with the findings of the other studies mentioned.

Staging

In our study, 26 (65%) patients belonged to the stage III correlating with their late presentation, 10 (25%) stage II and 5% in stage I and IV (Table 3). Patil et al found that most patients (50.7%) had stage III disease, while 28.8% patients had stage IV (metastatic) disease.[12] Early tumors were very rare (3.8% had stage I disease). Sharma et al (2017) found in their studies that 13.79% patients were in stage I, 17.24% Stage II, 58.62% Stage III and 10.34% in stage IV.[13] In the present study, a greater number of patients presented in the stage II and III which may be correlated to their late presentation to the tertiary health care centre or delay in their referral.

Treatment

Of the total 37 patients who underwent surgery in the present study, the curative resection rate was 72.9%. A total of 11 (27.50%) patients had anterior resection and

17 (42.50%) had an APR, of which 16 had an open abdomen and 1 had laparoscopic surgery (Table 5).

Deo et al found 75% of the patients underwent curative resection with abdominoperineal resection (APR) being the commonest procedure (42.50%).[14] According to the findings of Polglase et al 78.04% had a curative resection among 123 patients.[15] Bedrosian et al showed in their study that 63.43% had curative resection out of 134 patients.[16] In the study performed by Sharma et al, only 51.72% of patients underwent curative surgery, because at presentation disease was either inoperable or because of poor general condition.[13] The variations in the respectability rate in our study as compared with other studies may be probably due to the patients presenting with irresectable disease, in an advanced stage or early referral from a primary care centre. The location of most of the tumors in the lower rectum may also contribute to the variations in the respectability rate.

Follow up

In the present study, patients were followed up at 1 month interval due to short study period. They were followed up with laboratory and imaging according to feasibility. Only 27 (67.5%) of the total 37 patients operated, turned up for regular follow-up and adjuvant chemoradiotherapy. Two patients required hospital readmission due to recurrence. 8 (20%) patients had lost to follow-up.

Limitations

Most of the patients presented late in the tertiary care centre due to delay in the referral and the socioeconomic status of the patient. The study period was just performed for 1 year and the selection bias is inevitable. However, in our study, the follow-up protocols as mentioned could not be followed and important investigations for follow-up like CEA and colonoscopy were not done in all patients either due to lost to follow up, inability of the tools or the very short duration of the study period. So, it is not wise to comment on the long-term results of the treatment from such a short period of surveillance along with the lack of important investigating tools at our disposal.

CONCLUSION

In conclusion, surgery remains the mainstay of treatment but multimodality approach towards the treatment has definitely improved the ultimate outcome of patients with carcinoma rectum. The management of carcinoma rectum needs cumulative research of the patients' presenting complaints with thorough examination and doing the necessary diagnostic investigations and staging. In most of the cases, the growth could be felt by per rectal examination and the average distance of the lower margin of the growth from the anal verge was 4.65 cm. Most of the patients belonged to the stage III correlating with their late presentation and few of them in stage I and IV. The management of carcinoma rectum indeed needs a strategic plan and cooperation among the multiple specialties.

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