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The Importance of the level of lesion in the prognosis and treatment of carcinoma rectum and low sigmoid colon

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ABSTRACT: *Introduction: Rectosigmoid cancer represents a major public health problem in developed countries. It ranks third in frequency. Even in developing countries like ours the incidence of Rectosigmoid cancer has been on a steady rise. At present surgical resection remains the most effective modality of treatment in these patients. It was because of these implications that a study was made of the effect of the level of the lesion on the prognosis in carcinoma rectum and the lower part of the sigmoid colon. Objective-"To study the importance of the level of lesion in the prognosis and treatment of carcinoma rectum and low sigmoid colon in department of Surgery at M.Y. & Cancer Hospital, Indore". Material and Method: This is prospective and retrospective study of 51 patients admitted in M.Y. Hospital and Cancer Hospital, Indore during period of June 2010 to June 2013. Digital rectal examination (DRE) used as an initial screening examination; Additional studies include proctoscopy, flexible sigmoidoscopy and colonoscopy used as a complementary procedure. Result and Conclusion: As per the study done in our institute, for carcinoma rectum prognosis and survival is better in upper part of rectum irrespective of surgery than lower part. While for mid rectum i.e. 6-10 cm from anorectal junction, LAR is better surgical procedure with better survival than APR at the same level. For diagnosis and treatment of rectal cancer, as per our study MRI is better than CT scan. So it should be the investigation of choice for identifying the level of lesion.*

Keywords: *Rectosigmoid cancer, DRE, LAR, APR*

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I. Introduction

Rectosigmoid cancer has been on a steady rise probably attributed to change in our dietary habits with increased intake of dietary fat, meat, alcohol intake and smoking. Although there have been several advances in the multimodality treatment of cancer there has been hardly any change in the overall mortality rates of colon cancer over last 50 yrs. Rectosigmoid cancer best detected by proctosigmoidoscopy which allows sampling for histological diagnosis. It has been the practice of many surgeons to employ the operation of combined Abdominoperineal resection in the treatment of all lesions of the rectum, and in those lesions of the sigmoid colon located so low that an exteriorization operation of some type is not possible.It has been proposed,[12,3,4] that operations as curative as combined Abdominoperineal resection can be done which will at the same time conserve sphincteric function to some degree at least. It would seem that the location of the lesion, with respect to its distance from the ano rectal junction, might also be a factor of some importance. Furthermore, if it was observed that patients having low-lying rectal lesions treated by combined Abdominoperineal resection turned out less well than those having lesions in the middle and upper parts of the rectum, it might be an impetus to the trial of a more radical removal of the very low-lying lesions.

II. Aims And Objectives

1.To study prognosis of patient with respect to level of lesion.2.To compare effectiveness of surgical procedure used for management.3.To evaluate the efficacy of diagnostic modality.

III. Material And Method:

This is a prospective and retrospective study of prognosis of rectal cancer patients operated in M.Y. hospital during period of june 2010 - 13.In our study diagnostic modalities included; history and physical examination including Digital rectal examination, Proctoscopy, Colonoscopy, C.T. scan, M.R.I and Histopathology.Surgical management included Abdominoperineal resection (APR) & Low anterior resection (LAR). Then followup of patients was done at 3,6,12,18 & 24 months.For retrospective study, patients case record were obtained from medical record section & sorted out. Data collected from pt. files and used to fill working proforma.Patient were followed up and observations were made. For prospective patients**,** detailed history and examination was done to evaluate the patient. Necessary investigations were done. As per the

findings of diagnostic modalities surgical intervention was planned and follow up was done. All data regarding patient's prognosis was filled in working proforma and observations were made.
Patient selection:

INCLUSION CRITERIA:
1. Patients with carcinoma rectum and low sigmoid colon.
2. Patients who have/have not received prior chemotherapy and radiotherapy.
3. Patients whose follow up is possible.

EXCLUSION CRITERIA:
1. Patient having malignancy at other sites along with carcinoma rectum and low sigmoid colon
2. Morbid or inoperable patient.
3. Patient having rectum and sigmoid carcinoma with distant growth and managed palliatively.
4.

IV. Observations

TABLE NO. 1 SURVIVAL RATE ACCORDING TO TUMOUR GRADE

Grade	Grade-1	Grade-2
No. of Patients	21	30
Survived	19	22
Died	2	8
Survival Rate	90%	73%

TABLE NO. 2 SURGICAL PROCEDURE DONE AT SPECIFIED LEVEL OF LESION FROM ANORECTAL JUNCTION

Level of Lesion	Total No of Patients	APR	LAR
0-5 cm	24	24	-
6-10 cm	22	10	12
11 cm & above	5	-	5

Table no.3 Survival Rate According to Surgical Procedure at Specified Level of Lesion from Anorectal junction

Level of lesion	Surgical procedure			
0-5 cm	APR(24)		LAR	
	Survived	18	-	
	Died	6		
	Survival Rate	75%		
6-10 cm	APR(10)		LAR(12)	
	Survived	8	Survived	10
	Died	2	Died	2
	Survival Rate	80%	Survival Rate	83%
11 cm & above	APR		LAR (5)	
	-		Survived	5
			Died	0
			Survival Rate	100%

TABLE NO. 4 SURVIVAL RATE ACCORDING TO LEVEL OF LESION FROM ANORECTAL JUNCTION

Level of Lesion	0-5 cm	6-10 cm	11 cm & above
No. of Patients	24	22	5
Survived	18	18	5
Died	6	4	0
Survival Rate	75%	82%	100%

TABLE NO 5 Efficacy of Diagnostic Modality in Determining Level of Lesion from Anorectal junction

Diagnostic Modality	Colonoscopy/ Proctoscopy	CT	MRI
No. of Patient's	51	41	9
Level of Lesion	51	4	8
Percentage	100%	10%	89%

V. Discussion

Globally, colorectal cancer is the third most common malignant neoplasm after carcinoma of the lung and prostate in male and after breast and cervical cancer in female. It accounts for 8.8% of cancers in male and 9.2% in female. It is more common in Western communities like USA, England and Wales.

It is apparent that patients with lesions lying very near the anal margin, treated by combined abdominoperineal resection, have a prognosis which is poorer than those with higher-lying lesions removed by the same operation. This unfavorable group probably embraces those patients having a lesion, the lower margin

of which is within 5 or 6 cm. of the anorectal junction, as estimated by proctoscopy. patients with lesions, the lower margins of which are 6 to 10 cm. removed from the anorectal junction, have a somewhat better prognosis, whether the growth is with or without nodal involvement, than patients with low-lying lesions; while those with lesions 11 cm. or more from the anorectal junction have a prognosis superior to that of patients with lesions lying below this level. These differences are not in every instance of great magnitude, but they do seem to indicate a consistent and definite difference in the behavior of lesions at varying levels in the bowel.That such a difference occurs necessitates a consideration of two points.One of these is the possible basis for this difference in prognosis. the second is the application of a knowledge of these differences to the selection of operative procedures for carcinoma of the rectum and sigmoid, and to the interpretation of the results of these operations. There remains a borderline zone, extending from 6 cm. above the anorectal junction to 10 cm. above this point. It is very difficult to effects an anastomosis safely after resection of a growth located in this region; yet the rarity of lateral and retrograde spread in such lesions strongly suggests that sacrifice of the perineum and anal sphincters is not necessary. Thus a low anterior resection with preservation of the anal sphincters has seemed to us to be the advisable procedure for growths located in this region.

A final judgment as to the efficacy of this sphincter conserving operation as well as to that of other operations employed for lesions in this region must depend on a carefully controlled comparison between the survival rates allowed by them and those procured by the classic combined abdominoperineal resection for lesions at comparable levels in the bowel.[(1)]

MRI may permit more accurate T staging of rectal cancer by allowing better distinction among mucosa, muscularis, and perirectal tissues. The specificity and sensitivity of MRI to predict infiltration of the anal sphincter was 100% and 90%, respectively. However, N staging was not improved with this approach; the sensitivity and specificity for nodal disease being 68% and 24%, respectively. MRI may prove to be the option of choice for staging of more advanced rectal cancers. The technique has been useful in predicting the likelihood of a tumor-free resection margin by visualizing tumor involvement of the mesorectal fascia. MRI is more accurate tool to determine level of lesion from anorectal junction.

VI. Conclusion

As per the study done in our institute, for carcinoma rectum prognosis and survival is better in upper part of rectum irrespective of surgery than lower part. While for mid rectum i.e. 6-10 cm from anorectal junction, LAR is better surgical procedure with better survival than APR at the same level. For diagnosis and treatment of rectal cancer, as per our study MRI is better than CT scan. So it should be the investigation of choice for identifying the level of lesion.

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